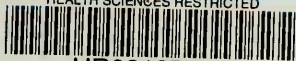


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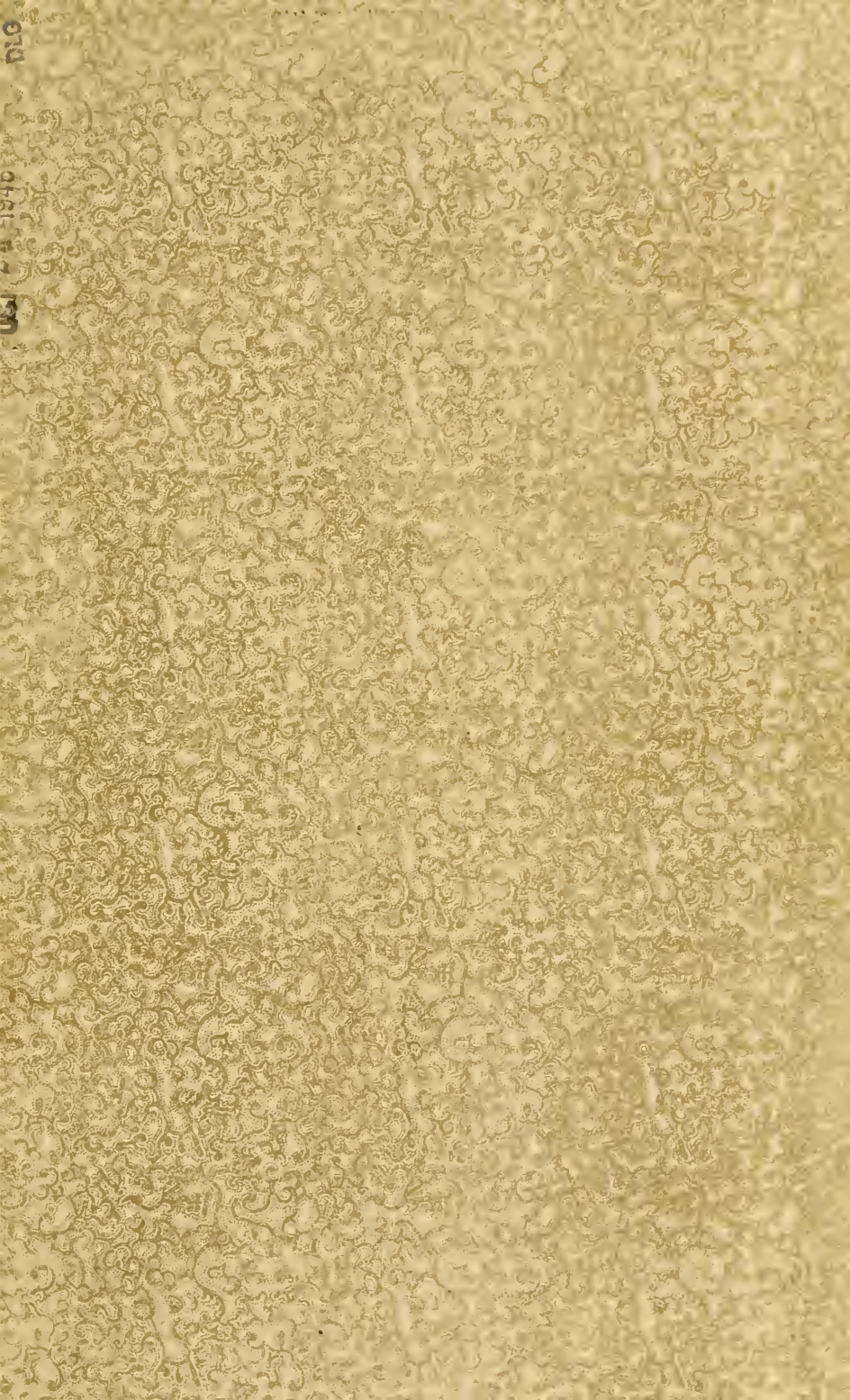
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FIRST ANNUAL REPORT

OF

The

# Department of Public Health

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July 1, 1917

TO

June 30, 1918.



C. ST. CLAIR DRAKE, M. D., Director

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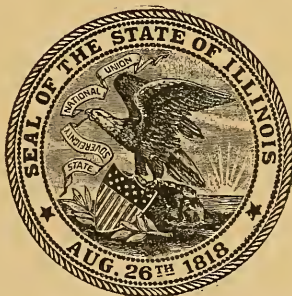




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## THE DEPARTMENT OF PUBLIC HEALTH

C. ST. CLAIR DRAKE, M. D., *Director*

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The State Department of Public Health, created by the Civil Administrative Code, came into being at a time when the Nation and State were beginning to adapt themselves to the new and complex problems of a Nation at war. These problems were encountered very early in the history of the department and were so urgent in character that they had to be met, often at the sacrifice of certain definite features of the program which had been mapped out for execution in times of peace. Practically every division of the department has felt and responded to this wartime demand.

The Executive Division has participated in the creation of the medical machinery for the enlistment of the National Army; the Director has responded to calls for service in a large number of conferences of National scope looking toward the sanitary and health control about military cantonments, the conservation and development of State health organizations and similar wartime problems.

The Division of Sanitation, the Division of Communicable Diseases and the Division of Surveys and Rural Hygiene have been called upon to conduct broad surveys and to engage in extensive health work in the sanitary zones created about the several camps and cantonments within the State.

The Division of Tuberculosis has been subjected to unusual wartime pressure and the Assistant Director has been charged with the supervision of the medical care of soldiers returned to the State on account of tuberculosis, whose number has exceeded 1,500 at the time these pages are written.

In addition to the wartime activities imposed upon the divisions originally created, it has been found necessary to create an entirely new Division—that of Social Hygiene—for the purpose of meeting the venereal disease problem about the military camps and in the civil population and to cooperate with the Federal Government in this important activity.

And so the following pages will constitute a doubly interesting public document, primarily, because it contains the annals of the activities of the first year of the first simon-pure health department the State of Illinois has ever had, and second, because it describes the public health activities of a great State adapting itself to wartime conditions.



2. To publish and distribute literature on the dangers from ophthalmia neonatorum.

3. To report violations of the Act to prosecuting attorneys.

#### *V. Duties under Miscellaneous Acts.*

1. The County and Township Board of Health Act authorizes the department to discharge the duties of local Boards of Health in case of failure or refusal to act in time of epidemic.

2. The Sanitary Health Districts Act requires the department to conduct competitive examinations for health officers.

3. The Barbers Act requires the department to approve sanitary rules for barber shops.

4. The Lodging House Act requires the department to formulate sanitary rules for inns, hotels and lodging houses.

5. The Occupational Diseases Act requires the department to furnish blanks for examinations for vocational and occupational diseases and to transmit such reports to the Division of Factory Inspection.

6. The Rabies Act requires the department to select institutions for the treatment of poor persons suffering from rabies.

7. An amendment to the Military and Naval Code authorizes the department to assume sanitary and health supervision over zones surrounding military camps, ranges or buildings used for military purposes.

#### DEPARTMENTAL ORGANIZATION

To carry out these manifold duties, the Department of Public Health was organized with ten divisions, each under a chief selected through civil service on account of his special training and experience. On account of the special needs arising out of wartime conditions and the necessity of cooperation with the Federal Government in the suppression and prevention of venereal diseases, especially in the military population, an eleventh division—that of Social Hygiene—was created later in the year.

The present divisions of the Department of Public Health are as follows:

I. *The Executive Division.* Or Central Offices, consisting of the offices of the Director and the Assistant Director and serving as a clearing house for all departmental activities. Has charge of accounting, departmental records and the assignment of all duties, and distribution of all communications. Serves as the center of contact in all cooperative work with other State departments, Federal departments and extra-governmental health agencies.

II. *The Division of Communicable Diseases.* Charged with the prevention and suppression of communicable diseases, the establishment of quarantine, investigations as to the sources of epidemics and the causes of infectious or contagious diseases and other important epidemiologic work including the maintenance of records of morbidity from commun-

icable diseases. Assists local health departments in the enforcement of health laws and rules and in the drafting and enforcement of ordinances. Maintains contact with all sections of the State through a staff of full-time district health officers.

III. *The Division of Tuberculosis.* Carries out an educational program to prevent and suppress tuberculosis and to develop anti-tuberculosis agencies—sanatoria, free dispensaries and visiting nurse service—in counties and cities throughout the State. Advises county authorities and especially trustees of county sanatoria, in the selection of sanatorium sites, sanitary installations, sanatorium construction, staff organization and operation. Aids in the development of tuberculosis dispensaries and the establishment of community nurse service. Cooperates with governmental and extra-governmental agencies in the care of returned tuberculosis soldiers.

IV. *The Division of Sanitation.* Conducts investigations of water supplies, and disposal of sewage and wastes, advises public officials in the installation and reconstruction of water works and sewage disposal plants and systems; investigates the source of epidemics of water borne diseases; investigates and aids in the abatement of certain nuisances. Conducts laboratories for water, sewage and waste analysis.

V. *The Division of Vital Statistics.* Registers all births, stillbirths and deaths. Compiles vital statistical data for other divisions of the State Department of Public Health, for other State departments and for Federal and extra-governmental agencies. Maintains a corps of local registrars numbering about 1,800 throughout the State. Furnishes blanks, forms and other supplies for local registration. Furnishes certified copies of certificates of all births and deaths occurring within the State and formal certificates of birth for all properly registered children.

VI. *The Division of Child Hygiene and Public Health Nursing.* Conducts educational activities for the promotion of work for child conservation such as child's clinics, visiting nursing service, child welfare stations, better baby conferences, etc. Maintains clinics for the after-care of victims of infantile paralysis in several sections of the State. Assists in the establishment of child welfare activities and local, public health nursing services.

VII. *The Division of Surveys and Rural Hygiene.* Conducts health and sanitary surveys of municipalities and rural communities and recommends improvements in existing sanitary conditions and health organization. Investigates sanitary and health conditions in rural sections, particularly in reference to water supplies and disposal of wastes.

VIII. *The Division of Diagnostic Laboratories.* Conducts a central laboratory at Springfield for the diagnosis of certain communicable diseases and the preparation of biologic products for the prevention and care of communicable diseases. Maintains branch laboratories for the diagnosis of communicable diseases in several sections of the State.

Distributes without charge, through several hundred agencies scattered throughout the State, diphtheria antitoxin, typhoid vaccine, and other curative and preventive agents.

IX. *The Division of Hotel and Lodging House Inspection.* Has supervision over cubic air space and certain other sanitary conditions in lodging houses, boarding houses, taverns, inns, and hotels in cities of over 100,000 population.

X. *Division of Public Health Instruction.* Devoted to educational activities for the prevention of diseases and the promotion of health. Furnishes exhibits, motion pictures, and other educational material, publishes circulars and pamphlets and maintains regular news service through the newspapers of the State. Cooperates in educational campaigns with all governmental and extra-governmental agencies.

XI. *The Division of Social Hygiene.* Conducts activities for the prevention and suppression of venereal diseases, especially in zones about military camps and cantonments. Conducts educational campaigns for the prevention and suppression of social diseases. Works in close co-operation with the Federal Government.

The more essential of these divisions have been organized for service as extensively as legislative appropriations would permit, while others, though less thoroughly organized and manned, have been established upon a basis of reasonable efficiency and one which will permit effective development in time to come. Preference in the distribution of appropriations has been given to those phases of work which are basic and fundamental and without which efficient public health service would be difficult if not impossible. In the development of the several divisions, stress has been laid upon those things requisite in meeting the requirements of the war in both the military and the civil population.



## THE EXECUTIVE DIVISION

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The Executive Division, including the offices of the Director and the Assistant Director, is the clearing house for all of the activities of the various divisions. This division has charge of the accounting, the office methods and the general records of the department under the supervision of the Chief Clerk, and through this division pass all mail and other communications before assignment to the other divisions.

Connected intimately with this division is the Division of Public Health Instruction, to which reference will be made elsewhere in these pages and, in connection with which, there is being developed a library of sanitation and public health with complete indexes of all available literature.

During the early part of the year, the Executive Division was chiefly engaged in the organization of the department and the creation of the several divisions—an undertaking which was rendered the more difficult by the increasing demand for physicians and other men and women of technical training in the Federal service and the withdrawal from State service of employees of previous experience, for the purpose of enlistment in military activities. Among the more important of these losses were those of the Chief of the Division of Sanitation, and the Chief of the Division of Diagnostic Laboratories together with some of the older and more experienced engineers, district health officers and quarantine officers.

The organization of the department was not completed when the Executive Division was subjected to unusual demands incidental to war-time conditions. The Director of the department has constantly cooperated with the offices of the Governor, the Adjutant General and of the Provost Marshal in the medical organization and activities of the various exemption boards engaged in examining recruits for the new National Army and in the organization of the district appeal boards and the medical advisory boards.

The Director has also been constantly engaged in the supervision of sanitary conditions in the zones surrounding military cantonments and particularly in a campaign for the prevention and suppression of venereal diseases in which he has cooperated with the Medical Department of the United States Army and with the United States Public Health Service. Much time and attention have been given to conferences with other State and National agencies in an effort to conserve the

technical personnel of the department, and at the same time, to contribute with the utmost liberality to the Federal needs,

The Assistant Director has been constantly engaged in the coordinated activities of the State Council of Defense, the State Department of Public Health and the extra-governmental tuberculosis agencies in meeting the tuberculosis war problem and, particularly, with the American Red Cross and several Federal agencies in caring for the hundreds of soldiers who have been returned to their home communities in Illinois on account of tuberculosis.

Regardless of these unusual activities, the various divisions are as completely organized as appropriations and existing conditions will permit; each performing its own specialized functions and all divisions coordinating as a unit in protecting the lives and health of the people.

## DIVISION OF COMMUNICABLE DISEASES

JOHN J. McSHANE, M. D., DR. P. H., *Chief*

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The Division of Communicable Diseases has been organized under a Division Chief, who takes the place of a State Epidemiologist, under whom there is a corps of six full-time district health officers through whom the division keeps in intimate touch with every section of the State. Each of these district health officers is assigned to his own section with whose needs he is expected to familiarize himself; but the entire corps may be brought together at any point in time of emergency. All of these officers are physicians, selected under civil service and all are required to devote their full time to their work. It is the duty of these district health officers to become conversant with the sanitary and health conditions of their own districts; to instruct and advise local health authorities; to settle disputed diagnoses in communicable diseases; to investigate undue prevalence of disease; to take part in public health education and to constitute the connecting link between the central offices of the department and the counties, cities and communities. These district health officers have constantly at their command, the specialized services of all the divisions of the department.

While the staff of six such officers is wholly inadequate to meet the need of the State in ordinary times, the plan itself is operating satisfactorily, and is guaranteeing an infinitely more efficient supervision of the public health and is a far more satisfactory link between State and local health authorities than has existed heretofore.

It is to be hoped, however, that this corps of district health officers may be materially increased so that there will not be a community in the State whose conditions will not be familiar to the department and which will not feel the influence of those agencies which the State has provided for the protection of the health of the people. The present staff is so constantly occupied in meeting emergencies throughout the State that they have little time for the equally important functions of constructive public health work such as the development of efficient health departments in their districts and public health educational work.

With the adoption of the Civil Administrative Code on July 1, 1917, and with the reorganization of communicable disease work, all of those activities essential to a full measure of health protection carried out by the State Board of Health were retained and extended in keeping with more advanced ideas of preventive medicine. At the same time,

many new functions, never before undertaken in the State, have been added.

Perhaps the most important of these newer undertakings in the control of communicable diseases have been in the promulgation and enforcement of rules and regulations for the control of venereal diseases and of pulmonary tuberculosis. These rules require the reporting of all cases of open tuberculosis and of syphilis, gonorrhea and chancoid and impose certain definite restrictions in the care of such cases so that they shall cease to be menaces to the public health. While these rules were rendered doubly essential on account of the importance of these particular diseases in time of war, they are not unreasonably drastic and are of such character as should be generally enforced when peace is again attained.

While special activities in the fields of venereal diseases and of tuberculosis have been assigned to divisions created for the purpose, such activities, in reality, constitute a large part of communicable disease work, far too long neglected in Illinois.

Within the past year, the Division of Communicable Diseases has established a system of card records of all communicable diseases reported to the division, making it possible to ascertain at a glance the number of cases reported in any section of the State or in the entire State for any month or during the entire year. The recent appointment of the Director of the Department as Collaborating Epidemiologist of the United States Public Health Service, authorizes the department to furnish to local health authorities franked postal cards for the required reports. Since local health officers are notoriously underpaid and since they are frequently required to meet such expenses as postage in their official work from their own pockets, it is believed that this arrangement for the free Federal transmission of reports will result in more complete registration of communicable diseases than ever obtained before.

It is very clear that, in some communities in the State, only a small proportion of the cases of communicable diseases are now reported although there is a general improvement in this particular. It still happens, not infrequently, however, that there are more deaths reported from a given disease than the total number of cases of that disease reported to the Division of Communicable Diseases. The causes of this unfortunate condition are perhaps several in number. Directly the fault seems to lie with the negligence of attending physicians. It is due in part, however, to the lack of organization, inefficiency and lack of permanent headquarters of local health departments in many sections of the State. It is probable that the reporting of communicable diseases would be far more complete if required by statute rather than through rules of the department promulgated under its general powers. Such a statute would reduce the possibility of question of authority and would



materially increase the presumption of legal knowledge of requirements on the part of the physician.

The following table shows the number of cases of the principal communicable diseases reported during the year ending June 30, 1918, compared with the reports of the same diseases during the previous year. In considering this table, several facts should be borne in mind; first, that the reports of communicable diseases in Illinois are not complete; second, that the reporting of gonorrhea and syphilis was not mandatory until November, 1917, and, third, that, while tuberculosis has been classed as a reportable disease in the past, insistence was not placed upon such reporting until August, 1917.

CASES PRINCIPAL COMMUNICABLE DISEASES REPORTED 1916-1917 AND 1917-1918

Diseases.	Year ending June, 1918.	Year ending June, 1917.	Diseases.	Year ending June, 1918.	Year ending June, 1917.
Diphtheria . . . . .	12,248	13,716	Scarlet fever . . . . .	7,672	27,534
Gonorrhea . . . . .	2,883	(Note)	Smallpox . . . . .	8,116	5,864
Malaria . . . . .	2,559	394	Syphilis . . . . .	1,505	(Note)
Measles . . . . .	29,191	49,945	Tuberculosis of lungs . . . . .	15,394	10,788
Epidemic meningitis . . . . .	591	247	Tuberculosis other forms . . . . .	4,309	418
Acute poliomyelitis . . . . .	883	934	Typhoid fever . . . . .	2,300	5,130

NOTE.—Syphilis and gonorrhea were not reported prior to November, 1917.

#### SMALLPOX

There has been a marked increase in the number of cases of smallpox during each year of the past decade. This is due to the fact that the disease has been generally mild in character and, on that account, the people have lost their fear of the disease to a large extent and have neglected protection by means of vaccination. Mild cases have not been reported and the disease has usually obtained a firm hold upon the community before its nature has been discovered. Having obtained so general a foot-hold, it has frequently spread through communities, difficult of suppression until all non-immune persons have been affected.

Unfortunately, this very mild type of smallpox may at any time, and for reasons not satisfactorily explained, become malignant and deadly in character. The calamity which this reversion to the former deadly type of the disease would entail might be avoided if vaccination could be made general and mandatory. However, there is at this time a determined opposition to this safe and remarkably efficient means of prevention on the part of some classes or sects of people.

During the winter months of 1917-1918, smallpox was especially prevalent in the southern part of the State, with severe epidemics in and about Harrisburg, Collinsville, Alton and Quincy. In these, as in several other localities, general vaccination was secured under the direc-

tion of the department and, as a result, it is safe to say that the disease will not occur in epidemic form in these communities for several years to come. Unfortunately this cannot be said to be the case in the larger portion of the State.

The mildness of the type of smallpox that has prevailed in the State during the year is indicated by the fact that, with 8,116 reported cases, there have been but 8 deaths—a mortality of less than 0.1 per cent.

#### DIPHTHERIA

Throughout the State, there was a slight decrease in the number of cases of diphtheria reported during the year, but in Chicago the disease was unusually prevalent during the fall and winter. In fact, the number of cases in Chicago was so great that the appropriation available for the purchase of antitoxin for distribution in that city was exhausted before January 1, and it was found necessary to suspend further free distribution by the State for the balance of the fiscal year.

In certain instances, the employment of the Schick test to determine immunity to diphtheria, supplemented by prophylactic or immunizing doses of antitoxin, has enabled the division to check the spread of the disease when it has appeared in schools and institutions.

The action of the division in taking cultures from the throats of children, where epidemics have threatened, has brought to light many individuals who were found to be "carriers" of the disease. The isolation of these "carriers" and other precautionary measures placed the situation promptly under control.

#### SCARLET FEVER

The decrease in scarlet fever during the year has been very striking, there being only about 7,500 cases reported as compared with 27,500 for the year previous. There have been no extensive epidemics anywhere in the State, and, wherever the disease has appeared, strict quarantine, and systematic examination of school children served to control the outbreaks.

#### TYPHOID FEVER

While the number of cases of typhoid fever reported during the year was smaller than in the preceding year, it is interesting to note that the number of Widal tests made in the laboratory and the quantity of typhoid vaccine distributed by the State were both increased. Whether this means that the reports were less complete than during the previous year, or whether it indicates that more general use of vaccine and more frequent recourse to laboratory diagnosis served to decrease the incidence of the disease, is open to conjecture.

During the year, arrangements were made to distribute a mixture of the vaccines of typhoid and paratyphoids A and B, in place of the simple typhoid vaccine distributed in the past.

Further reference to serious epidemics of typhoid fever at Moline and Decatur and of apparently water-borne intestinal disease at Peoria, is made in the report of the Division of Sanitation.

#### MEASLES

It is very evident that the reports of the prevalence of measles for both the past year and the preceding year were exceedingly incomplete. Mild cases of this disease, readily recognized by the mother and popularly regarded as harmless in character, are frequently treated without calling a physician and the cases consequently remain unreported. It is safe to say, however, that measles has been far less prevalent during the past year than during the year preceding.

The seriousness of measles as a forerunner of complications and other diseases as well as the relatively high mortality from the disease itself, should suggest more attention to it on the part of physicians, health officers and parents. Measles, particularly among adults, is notorious in lighting up pulmonary tuberculosis.

#### EPIDEMIC MENINGITIS

With the exception of epidemics of meningitis at Virden, Macoupin County, and at Waukegan, Lake County, this disease has prevailed less than usual throughout the State during the past year. The outbreak at Virden began in February, 1918, and continued throughout March and April with a total of 18 cases and with eight deaths, a mortality of 33½ per cent, which is a little less than the average mortality for this disease.

#### ACUTE POLIOMYELITIS

During the fiscal year 1916-1917, acute poliomyelitis or infantile paralysis, spread over Illinois causing grave alarm on account of the serious epidemics of that disease occurring in the eastern states. During that year, there were upward of 1,000 cases in Illinois. During the past year the number of cases decreased, but the disease was more widely disseminated throughout the State. Epidemic proportions were not reached in any section of the State except in Chicago and DeKalb.

The exceedingly interesting and valuable services in the clinical treatment and after-care of the victims of infantile paralysis, carried out by the Division of Child Hygiene and Public Health Nursing, will be referred to in the report of that division.

#### MALARIA

In the early history of Illinois, malaria was generally prevalent throughout the State, particularly in the southern and central portions, so much so, in fact, that it was looked upon as an almost universal disease and innumerable vague ailments were attributed to it. While the prevalence of the disease has steadily decreased, it is still to be found

at all times in certain sections of the State and is looked upon so much as a matter-of-course that it is exceedingly difficult to secure reports of its prevalence as a communicable disease. On this account, the figures shown in the reports of malaria to the Division of Communicable Diseases have no significance except that they indicate that the persistent policy of education adopted by the department is beginning to bear some fruit.

During 1917 questionnaires were sent to all of the physicians in groups of counties in Southern Illinois asking for reports on all cases of malaria coming under their care during several months preceding. The counties included were: Alexander, Massac, Union, Pope, Saline, Williamson, Jackson, St. Clair, Clark, Cumberland, Effingham, Fayette, Pulaski, Clinton, Crawford, Jasper, and Adams. The reports were not uniform or complete but it is significant that individual physicians practicing in small counties or in rural communities reported from 50 to 500 cases under their care.

The destruction or treatment of pools of stagnant water or other breeding places of mosquitos, and this upon a large scale after careful investigation of the malaria problem, is one of the sanitary undertakings of the future which will result in a great saving of human life, a material reduction of illness as well as an economic and commercial saving of the first magnitude.

As intimated in previous pages, the reports of tuberculosis are very incomplete owing to the fact that insistence upon the reporting of this disease was not made until the past year, and this is true, even to a greater extent, in regard to venereal diseases which were not reportable until November, 1917.

Further discussion of tuberculosis and venereal diseases will be found in the reports of the Divisions of Tuberculosis and of Social Hygiene.

#### THE COST OF COMMUNICABLE DISEASES

It is impossible to measure, by any means readily appreciated by the public, the sum total of human suffering and human life demanded each year by communicable diseases. Each human life, however, has a definite cash value not only to the individual and his dependents; but to the community as well, while the time of the wage earner, the cost of medical care and of funerals may be readily reckoned in dollars and cents and the story told in the sordid, commercial terms of monetary value is understandable to all classes and conditions of people.

Since, as a general proposition, communicable diseases are preventable diseases—since illness and death from these diseases is largely avoidable through generally known methods of prophylaxis—we must regard the tremendous loss to the counties of Illinois shown in the table presented here—a cost of approximately \$155,000,000 per year—



as being a *preventable loss*—a loss to which an intelligent and far-seeing State does not have to submit.

But even this tremendous cost—an annual cost averaging 6.01 per cent of the assessed valuation of the county's wealth—does not express all of even the major part of the cost of communicable disease. It is only supplemental to the greater expense—the indefinite value of human life unnecessarily sacrificed, of human suffering unnecessarily borne, of human grief unnecessarily inflicted upon the men, the women and the children who constitute the State.

There has been a disposition, in generations past, to look upon disease and untimely death as inevitable; a burden imposed for some mysterious reason upon mankind by an all-wise Providence. The advance of preventive medicine has convinced us that men and women need not bend their necks in helpless submission to communicable diseases nor even to many ailments which are neither infectious or contagious and which may be prevented by a more intelligent adjustment of living and working conditions.

Public health is purchasable and the community may have as much health or as little health as the people are willing to pay for. This control of health by generous expenditure of money in the employment of men expert in the creation of health and the prevention of disease, can be illustrated no better than in the construction of the Panama Canal. In this undertaking, the French Government failed, not through lack of engineering skill, but on account of the ravages of communicable disease. The brilliant success of the American people in this same undertaking was due to the expenditure of public funds for the suppression of disease. By a similar intelligent program, by the expenditure of moderate amounts of money for the creation of adequate public health machinery now made possible under salutary state laws, Illinois can reduce tremendously the burden of communicable disease which now rests so heavily upon her people.

The accompanying table, based largely upon deaths for the fiscal year ending June 30, 1918, indicates that the estimated cost of illness and deaths from communicable diseases has amounted to approximately \$24.67 for every man, woman, and child in the State. Students of preventive medicine declare that a tax of one dollar per capita per annum will furnish efficient public health organization and adequate health protection. As previously stated, the average financial cost of communicable diseases each year amounts to 6.01 per cent the assessed property valuation in the county. In one county, this cost amounts to 30 per cent of the assessed valuation. In other words, in a period of three and one-third years, the loss occasioned by communicable disease in that county would amount to the total taxable wealth. And this loss is preventable and unnecessary.

On account of the fact that communicable diseases are not reported as fully as they should be in many sections of the State (and this is

## COST OF PREVENTABLE

County.	Popula- tion.	General death rate per 1,000.	Assessed valuation of property, 1917.	Principal preventable diseases.				
				(1) Typhoid.	(4) Malaria.	(5) Small- pox.	(6) Measles.	(7) Scarlet fever.
1. Adams.....	64,588	14.5	\$ 25,061,497	\$ 71,400	\$ 11,100	\$42,000	\$ 4,420	\$ 5,200
2. Alexander.....	25,361	16.4	6,538,093	56,100	210,600	1,500	2,100	2,600
3. Bond.....	17,851	8.9	5,759,175	10,200	960	2,900	2,100	1,300
4. Boone.....	15,481	8.6	8,385,597	-----	-----	2,300	990	450
5. Brown.....	10,397	10.2	4,037,224	10,200	800	900	1,170	375
6. Bureau.....	46,354	9.1	23,052,894	25,500	800	6,800	6,540	2,750
7. Calhoun.....	8,610	7.5	2,846,227	23,500	1,600	100	30	2,400
8. Carroll.....	18,035	9.6	9,913,020	6,100	160	300	1,070	475
9. Cass.....	17,487	11.8	9,222,499	5,100	2,240	3,600	2,100	-----
10. Champaign.....	55,113	10.7	34,731,535	15,300	1,120	3,700	3,220	5,200
11. Christian.....	35,305	12.2	19,367,229	10,200	3,260	9,500	1,790	6,000
12. Clark.....	23,517	10.2	6,695,133	7,900	4,700	1,800	1,560	200
13. Clay.....	18,661	9.8	4,314,057	2,600	1,120	-----	2,180	125
14. Clinton.....	25,178	10.4	6,666,856	10,200	9,820	14,700	130	1,300
15. Coles.....	34,806	12.6	12,253,985	17,900	320	1,500	8,330	575
16. Cook.....	2,847,434	17.4	1,149,688,832	276,700	9,780	54,000	73,580	178,100
17. Crawford.....	31,778	7.9	8,083,516	20,400	7,100	700	1,150	200
18. Cumberland.....	14,281	10.4	4,872,184	10,200	-----	2,100	1,210	475
19. DeKalb.....	34,783	10.4	20,075,266	15,300	-----	1,100	6,300	3,900
20. DeWitt.....	18,906	11.0	10,335,023	5,100	3,260	4,200	240	150
21. Douglas.....	19,976	8.3	11,164,942	5,100	320	300	2,100	225
22. DuPage.....	37,516	9.1	17,176,295	5,100	-----	100	1,660	475
23. Edgar.....	27,336	10.9	15,933,071	7,100	1,120	6,400	5,250	1,300
24. Edwards.....	10,049	8.7	3,286,894	1,600	9,500	100	800	550
25. Effingham.....	20,055	11.6	7,526,530	20,400	320	500	40	200
26. Fayette.....	28,083	9.2	8,516,001	30,600	11,100	10,200	6,200	500
27. Ford.....	17,096	8.6	14,635,004	4,800	800	700	140	9,100
28. Franklin.....	30,634	16.5	8,292,756	56,100	57,300	20,500	3,150	225
29. Fulton.....	52,165	10.2	18,708,110	30,600	10,560	13,300	10,450	3,350
30. Gallatin.....	14,628	8.5	2,786,811	10,200	38,200	2,700	620	50
31. Greene.....	22,363	11.8	9,629,809	200	160	2,800	3,150	325
32. Grundy.....	24,181	7.1	12,006,664	10,200	640	-----	1,060	200
33. Hamilton.....	18,227	8.9	4,114,902	10,200	1,280	3,400	1,050	250
34. Hancock.....	30,636	8.6	15,257,045	15,300	-----	3,500	5,250	800
35. Hardin.....	7,015	13.3	1,052,366	25,500	38,200	5,100	2,510	-----
36. Henderson.....	9,724	8.3	7,868,745	5,100	19,100	1,500	1,410	1,300
37. Henry.....	43,054	10.7	21,529,773	25,500	-----	3,600	5,290	650
38. Iroquois.....	35,543	8.4	29,316,402	20,400	960	3,900	380	1,300
39. Jackson.....	36,133	11.2	7,501,272	51,000	110,600	24,400	1,300	1,400
40. Jasper.....	18,157	7.8	5,420,273	15,300	2,240	100	2,100	1,300
41. Jefferson.....	29,875	11.9	6,430,170	51,000	800	2,100	2,100	1,900
42. Jersey.....	13,954	10.0	4,730,249	10,200	38,200	6,200	2,100	2,375
43. JoDavies.....	22,657	8.0	11,176,678	10,200	-----	5,800	1,000	2,400
44. Johnson.....	14,331	6.3	3,357,158	15,300	70,200	1,100	1,050	-----
45. Kane.....	102,064	14.4	36,841,078	40,800	-----	1,700	6,490	9,100
46. Kankakee.....	43,559	15.7	17,191,635	25,500	960	1,100	1,060	1,875
47. Kendall.....	10,777	10.3	7,434,872	-----	320	600	410	175
48. Knox.....	48,147	12.3	23,257,166	45,900	-----	2,700	3,440	1,500
49. Lake.....	71,100	11.8	25,155,246	91,800	160	400	24,150	13,000
50. LaSalle.....	91,970	11.5	40,193,042	35,700	-----	1,800	20,480	3,900
51. Lawrence.....	27,452	5.5	7,667,124	9,300	4,640	5,200	2,100	5,200
52. Lee.....	27,750	10.5	19,716,853	5,100	-----	100	670	275
53. Livingston.....	40,465	7.9	30,165,112	35,700	320	500	2,100	750
54. Logan.....	31,412	13.6	20,087,216	10,200	-----	3,500	5,250	375
55. Macon.....	62,133	12.0	24,319,133	61,200	-----	5,900	1,360	1,000
56. Macoupin.....	57,264	7.3	15,225,274	30,600	160	22,200	1,430	2,400
57. Madison.....	109,481	11.7	33,309,955	76,500	19,100	62,900	3,480	2,775
58. Marion.....	38,720	11.7	7,934,053	45,900	-----	5,700	800	3,900
59. Marshall.....	15,679	6.2	10,610,577	-----	160	900	6,300	250
60. Mason.....	17,377	9.3	9,328,654	800	-----	3,900	350	1,650
61. Massac.....	15,049	16.1	3,787,233	56,100	89,300	1,800	160	25
62. McDonough.....	26,887	11.7	15,664,548	30,600	480	7,400	8,090	2,025
63. McHenry.....	34,654	10.4	18,482,556	20,400	-----	100	1,220	450
64. McLean.....	68,135	11.6	42,996,235	30,600	3,520	4,700	2,930	2,400
65. Menard.....	12,796	8.8	7,751,679	800	480	800	1,110	75
66. Mercer.....	19,723	7.5	12,505,161	5,100	-----	500	3,520	2,850
67. Monroe.....	13,508	10.1	5,232,157	25,500	38,200	10,100	30	225
68. Montgomery.....	38,802	12.0	15,528,447	51,000	83,100	5,200	1,340	800
69. Morgan.....	34,420	20.3	18,500,789	45,900	-----	6,700	2,100	2,100

## DISEASES BY COUNTIES.

Principal preventable diseases.						Total.	Per cent of assessed valuation.	Per capita loss.	
(8)	(9)	(61C)	(63D)	(28-35, 90) Tubercu- losis and Chr. Bron- chitis.	(91-92) Pneu- monia.				
Whoop- ing Cough.	Diph- theria.	Menin- gitis.	Poliomy- elitis.						
\$ 740	\$ 8,000	\$ 1,935	\$ 1,600	\$ 917,000	\$ 247,520	\$ 1,310,915	5.23	\$ 20 30	1
3,900	1,600			786,000	142,500	1,206,900	18.46	47 59	2
	800	120		301,300	54,600	374,280	6.50	20 97	3
	875			144,100	36,400	185,115	2.21	11 96	4
10	1,025		800	117,900	32,625	165,805	4 11	15 95	5
5,200	3,150	1,815	800	340,600	182,000	575,955	2.60	12 42	6
1,300	1,600	60		157,200	29,120	216,910	7.62	25 19	7
530	100		800	170,300	40,175	220,010	2.22	12 20	8
5,200	2,400		50	196,500	54,600	271,790	2.95	15 54	9
7,800	3,475	1,815	800	694,300	163,800	900,530	2.59	16 34	10
6,500	1,600		800	510,900	185,100	735,650	3.80	20 84	11
6,500	1,600		50	196,500	61,420	282,230	4.22	12 00	12
3,900	100		800	258,900	72,800	342,525	7.94	18 36	13
3,900	3,200	1,815		275,100	138,725	458,890	6.88	18 23	14
6,880	3,200		2,400	406,100	112,975	560,180	4.57	16 09	15
249,600	777,125	295,635	368,900	62,552,500	16,398,150	81,228,020	7.07	28 52	16
1,710	2,400	60		134,400	91,000	259,120	3.43	8 15	17
8,850	800			301,300	47,320	372,255	7.64	26 07	18
16,500	2,400	240	5,100	366,800	98,280	518,920	2.58	14 83	19
240	800	120	800	183,400	69,700	268,010	2.59	14 18	20
6,500	150		800	183,400	43,680	242,575	2.17	12 20	21
2,200	300	1,815	2,400	353,700	87,900	455,650	2.65	12 14	22
3,900	1,600	60	50	353,700	62,150	442,630	2.78	16 19	23
730	800			170,300	21,975	206,355	6.28	20 53	24
5,200	4,800	360		314,400	80,350	426,570	5.67	21 27	25
3,800	1,600			589,500	72,800	726,300	8.53	25 87	26
4,100	800		1,600	222,700	47,320	292,060	1.99	17 08	27
10,500	9,600	240	50	458,500	192,920	809,085	9.76	26 41	28
3,200	8,000	240	100	563,300	131,000	774,100	4.14	14 84	29
3,900	1,600			262,000	25,480	344,750	12.37	23 57	30
5,200	2,625	60	1,600	288,200	91,000	395,320	4.11	17 60	31
2,600	800		2,400	235,800	47,320	301,020	2.51	12 45	32
110	800	1,815	50	288,200	65,520	372,675	9.06	20 45	33
2,600	1,600		250	144,100	76,440	249,840	1.64	8 16	34
3,900	2,400			209,600	25,480	312,690	29.71	44 57	35
1,900			800	26,200	21,840	79,150	1.01	18 14	36
7,800	2,400	360	3,600	389,900	185,640	624,740	2.90	14 51	37
1,450	1,600	1,815	750	183,400	105,425	321,380	1.10	9 04	38
3,750	4,000	60		589,500	131,040	917,050	12.23	25 38	39
80				183,400	50,960	255,480	4.71	14 07	40
8,400	5,600		800	653,900	112,975	839,575	13.05	28 10	41
700	1,600	60		170,300	29,120	260,855	5.51	18 69	42
1,300	825	120	150	157,200	69,160	248,155	2.22	10 95	43
100	4,000			258,900	32,760	383,410	11.42	26 75	44
26,550	7,200	180	2,400	1,611,300	465,920	2,171,640	5.89	21 28	45
2,280	4,350	60	4,800	1,349,300	294,960	1,686,245	9.81	38 71	46
3,900	50		800	1,310,000	21,840	1,338,095	17.99	124 16	47
4,200	9,600		1,600	458,500	178,900	706,340	3.04	14 67	48
5,200	16,000	52,815	4,800	851,500	498,680	1,558,505	6.20	21 92	49
6,400	20,800	1,815	850	1,467,200	378,560	1,937,505	4.82	21 07	50
1,710	1,600	180		183,400	87,360	300,690	3.92	10 95	51
1,050	75		50	262,000	69,160	338,480	1.72	12 17	52
3,150	1,000		800	262,000	87,360	338,680	1.30	9 72	53
4,700	4,800		800	1,319,300	163,800	1,512,725	7.53	48 15	54
7,350	4,000	50	2,150	917,000	218,400	1,218,410	5.01	19 61	55
7,350	4,000	10,890	800	419,200	148,700	647,730	4.25	11 31	56
21,000	20,700	60	2,400	1,912,600	455,000	2,576,515	7.73	23 53	57
9,400	450			658,100	162,040	886,290	11.17	22 89	58
1,050	800	60		52,400	32,760	94,680	.89	6 04	59
2,100			50	170,300	50,960	230,110	2.45	13 24	60
3,900	3,200			484,700	61,880	701,065	18.51	46 59	61
2,650	925		600	262,000	69,160	383,930	2.45	14 28	62
12,600	1,850	180	2,400	314,400	94,640	448,240	2.42	12 93	63
4,200	7,200	120	2,950	786,000	156,520	1,001,140	2.33	14 69	64
200	75		800	183,400	29,120	216,860	2.80	16 95	65
890			400	117,900	47,320	178,480	1.43	9 05	66
	800			131,000	40,040	245,895	4.70	18 20	67
2,100	1,700			681,200	200,320	1,026,760	6.61	26 46	68
8,400	1,600			1,048,000	283,920	1,398,720	7.56	40 64	69

## COST OF PREVENTABLE

County.	Popula- tion.	General death rate per 1,000.	Assessed valuation of property, 1917.	Principal preventable diseases.				
				(1) Typhoid.	(4) Malaria.	(5) Small- pox.	(6) Measles.	(7) Scarlet Fever.
70. Moultrie.....	14,630	10.9	\$ 7,994,459	\$ 10,200	\$ 480	\$ 1,100	\$ 340	\$ 400
71. Ogle.....	27,864	9.4	20,101,488	800	3,300	1,400	1,940	7,100
72. Peoria.....	109,346	16.3	41,228,607	90,200	11,100	29,100	8,400	6,500
73. Perry.....	23,849	12.2	5,440,876	40,800	57,300	4,200	1,050	2,600
74. Piatt.....	16,376	8.9	12,263,995	5,100	160	900	100	300
75. Pike.....	28,622	8.6	11,479,123	35,700	19,100	7,700	2,540	725
76. Pope.....	11,215	4.1	1,945,739	20,400	140,400	-----	-----	50
77. Pulaski.....	16,506	12.8	2,641,459	10,200	456,300	1,500	4,200	200
78. Putnam.....	9,757	8.2	3,344,152	-----	160	1,900	3,700	-----
79. Randolph.....	29,991	10.3	7,787,160	30,800	3,840	14,800	2,100	1,500
80. Richland.....	15,970	9.8	4,834,727	10,200	1,120	400	380	275
81. Rock Island.....	82,233	16.6	23,034,223	147,900	3,260	4,000	19,760	7,575
82. Saline.....	36,853	11.7	5,686,349	61,200	140,400	41,300	5,100	75
83. Sangamon.....	106,189	11.6	39,506,388	102,000	800	11,100	16,920	875
84. Schuyler.....	14,852	8.1	6,068,864	5,100	-----	400	2,670	250
85. Scott.....	10,067	6.0	5,246,416	5,100	-----	-----	120	1,300
86. Shelby.....	31,663	8.9	14,853,795	35,700	-----	3,700	4,600	1,300
87. Stark.....	10,098	8.0	7,875,708	-----	320	2,900	850	325
88. St. Clair.....	145,772	12.1	35,411,031	86,700	191,000	46,700	7,900	5,675
89. Stephenson.....	38,513	11.5	17,406,825	25,500	-----	2,100	790	1,700
90. Tazewell.....	34,664	9.8	20,672,620	25,500	-----	5,000	1,830	450
91. Union.....	21,856	19.4	4,703,929	61,200	175,500	6,600	3,150	1,300
92. Vermilion.....	87,644	14.7	37,866,019	61,200	1,120	6,600	11,910	2,600
93. Wabash.....	16,731	9.9	4,848,341	35,700	35,100	1,000	190	1,250
94. Warren.....	23,428	9.8	15,313,411	2,000	-----	1,800	7,900	175
95. Washington.....	18,759	8.8	5,341,420	5,500	35,100	500	2,260	4,150
96. Wayne.....	25,697	8.2	6,748,490	30,600	124,400	900	1,860	1,300
97. White.....	23,052	9.0	6,127,101	35,700	35,100	1,500	800	25
98. Whiteside.....	34,507	11.1	18,807,306	10,200	4,700	1,700	1,070	5,200
99. Will.....	91,869	12.2	35,468,415	71,400	11,100	700	36,230	8,125
100. Williamson.....	58,603	11.1	8,896,819	76,500	274,100	36,100	7,110	650
101. Winnebago.....	75,101	15.3	37,071,197	40,800	3,260	8,200	12,120	23,150
102. Woodford.....	20,506	8.5	13,740,611	15,300	11,100	1,400	5,390	175
State.....	6,276,364	14.2	\$2,577,990,810	\$3,006,900	\$2,660,860	\$675,600	\$456,020	\$388,300



## DISEASES BY COUNTIES—Concluded.

Principal preventable diseases.						Total.	Percent of assessed valuation.	Per capita loss.	
(8)	(9)	(61C)	(63D)	(28-35, 90) Tubercu- losis and Chr. Bron- chitis.	(91-92) Pneu- monia.				
Whoop- ing Cough.	Diph- theria.	Menin- gitis.	Poliomy- clitis.						
\$ 190	\$ 50	-----	\$ 1,600	\$ 209,600	\$ 69,160	\$ 293,120	3.67	\$20 04	70
520	1,600	-----	800	235,800	94,640	347,900	1.73	12 49	71
14,700	24,000	\$ 2,775	3,200	2,829,600	560,560	3,580,135	8.68	38 74	72
15,600	2,400	60	-----	380,900	76,440	581,350	10.68	24 38	73
1,620	800	-----	800	144,100	32,760	186,640	1.52	11 40	74
2,650	900	60	800	445,400	59,860	575,435	5.01	20 10	75
80	800	-----	-----	52,400	7,280	221,410	11.38	19 74	76
13,650	-----	60	800	419,200	87,360	993,470	37.61	60 19	77
-----	1,725	60	-----	104,800	36,400	148,745	4.45	15 24	78
4,750	4,000	-----	800	602,600	116,480	781,470	10.03	26 06	79
2,600	800	-----	-----	235,800	43,680	295,255	6.11	18 49	80
14,750	13,600	12,705	10,500	1,663,700	643,340	2,541,090	11.03	30 90	81
10,500	13,600	360	50	655,000	174,720	1,102,305	19.38	29 91	82
7,010	5,600	3,750	2,250	1,729,200	382,200	2,261,705	5.72	21 30	83
4,600	800	-----	50	78,600	32,760	125,230	2.06	8 43	84
2,300	800	-----	-----	52,400	18,200	80,220	1.53	7 97	85
4,200	2,400	120	-----	327,500	80,080	459,600	3.09	14 50	86
130	2,400	-----	-----	26,200	14,560	47,685	.61	4 72	87
18,900	19,200	120	800	2,638,600	723,440	3,739,035	10.56	25 64	88
1,050	1,200	-----	2,400	396,100	127,400	558,240	3.21	14 49	89
740	4,800	1,815	50	458,500	120,120	618,805	2.99	17 86	90
5,250	3,200	-----	-----	792,200	72,800	1,121,200	23.84	51 30	91
10,300	9,800	3,630	1,600	1,414,800	404,850	1,928,410	5.09	21 98	92
3,650	800	240	-----	144,100	54,600	276,630	5.71	16 53	93
1,520	1,600	120	800	458,900	25,480	500,295	3.27	21 36	94
4,200	1,600	-----	800	157,200	43,680	254,990	4.77	13 59	95
4,750	275	-----	-----	419,200	80,350	663,635	9.83	25 83	96
4,200	3,200	-----	-----	366,800	59,725	507,050	8.28	21 99	97
3,150	2,400	-----	100	396,800	75,900	471,220	2.51	13 66	98
5,850	24,800	1,815	1,600	1,244,500	436,800	1,842,920	5.20	20 06	99
6,350	5,600	360	2,400	877,700	257,900	1,544,770	17.36	26 36	100
8,000	8,150	19,960	800	1,306,900	538,450	1,969,790	5.31	26 23	101
1,950	7,200	660	50	196,500	91,000	330,725	2.41	16 13	102
\$735,220	\$1,156,625	\$425,700	\$461,600	\$114,905,500	\$30,009,360	\$154,881,685	6.01	\$24 67	

PRINCIPAL COMMUNICABLE DISEASES REPORTED IN ILLINOIS DURING  
FISCAL YEAR, JULY 1, 1917, TO JUNE 30, 1918, INCLUSIVE.

	(1)	(4)	(5)	(6)	(7)	(8)	(9)	(61C)	(63D)	(28-35)	(91-92)
Counties with important cities and towns.	Typhoid Fever.	Malaria.	Smallpox.	Measles.	Scarlet Fever.	Whooping Cough.	Diphtheria.	Meningitis.	Poliomyelitis.	Tuberculosis and Chronic Bronchitis.	Pneumonia.
Adams County.....	41		410	277	35	74	88	6	2	18	
Quincy.....	35		312	171	15	62	83	6	1	18	
Alexander County.....	7		21	21	8	89	10				1
Cairo.....	5		15	10	2	58	8				
Bond County.....	8	6	29	17	16	22	2	2		13	4
Boone County.....			23	99	18		13				
Brown County.....		4	9	117	15	1	19			6	
Bureau County.....	18	5	68	432	66	85	42		5	11	8
Calhoun County.....	2	10	1	3	12		3	1			
Carroll County.....	15	1	3	107	19	52	4			7	9
Cass County.....	1	14	36	42		32	7		1	9	2
Champaign County.....	16	7	37	267	35	75	51	1	2	10	6
Champaign.....	9		11	34	11	16	7			4	
Urbana.....	3		5	55	3	9	24			2	
Christian County.....	6	1	64	124	22	14	13		3	3	10
Clark County.....	24		18	156	8	26	3		1	1	2
Clay County.....	13	7		108	5	26	4		1	7	
Clinton County.....	18	42	147	13	29	14	22	2		6	6
Coles County.....	45	2	15	448	23	193	39		3	22	3
Mattoon.....	23	1	1	132	10	8	25		1	9	
Cook County.....	30		385	3,344	3,664	7,027	7,985	386	702	12,509	5,642
Chicago.....	265		370	3,302	3,260	5,753	7,299	346	626	12,570	5,598
Chicago Heights.....	5		1	22	67	94	299	24	24	5	3
Cicero.....			4	21	58	2	40	4	6	14	5
Everston.....	3		2	241	34	251	26	1	3	3	
Maywood.....				25	12	59	16		10	8	
Oak Park.....	3			306	68	307	78		8	10	22
Blue Island.....	3		4	3	9	39	13	1	5	13	
Crawford County.....	20	21	5	60	8	116	2	1		13	3
Cumberland County.....	4		21	66	17	40	5			8	1
DeKalb County.....	5		11	154	34	129	29	4	11	1	2
DeKalb.....	2			12	19	56	17	2	3		
DeWitt County.....	2	1	21	24	6	24	3	2	2	1	6
Douglas County.....	8	2	3	41	9	27	6		2	8	12
DuPage County.....	1		1	166	19	166	12	2	7	17	3
Edgar County.....	8	7	64	91	5	72	14	1	1	2	4
Edwards County.....	8	4	1	8	22	73	2			5	1
Effingham County.....	11	2	5	4	8	15	44	6			
Fayette County.....	8	12	102	72	20	22	8			1	
Ford County.....	24	5	7	14	33	50	8		1	5	5
Franklin County.....	48	85	205	86	9	59	19	4	1	19	30
Fulton County.....	7	66	133	536	112	98	45	4	2	4	4
Canton.....			15	86	16	31	8				
Gallatin County.....	4	13	27	62	2	15	2			4	2
Greene County.....	1	1	28	46	13	63	39	1	1	6	4
Grundy County.....	3	4		51	8	51	1		1	2	2
Hamilton County.....	3	8	34	6	10	11		3	1	2	
Hancock County.....	8		35	216	32	39	18		5	3	1
Hardin County.....	12	1	51			14	2				
Henderson County.....	1		15	141	6	135			1	7	
Henry County.....	9		36	496	26	127	20	6	6	6	7
Kewanee.....	2		2	145	11	60	12	1	1	1	
Iroquois County.....	9	6	39	38	22	90	9	1	2	6	3
Jackson County.....	13	36	244	19	56	23	30	1		11	1
Jasper County.....	8	14	1	100	13	8				1	1
Jefferson County.....	10	5	30	41	54	10	8			16	2
Mt. Vernon.....	1		9	7	48	7	4			2	2
Jersey County.....	18	4	31	65	73	70	3	1		7	
JoDaviess County.....	3		58	101	16	46	11	2	3	1	2
Johnson County.....	5	11	11	1		10	2			4	
Kane County.....	16		17	319	121	483	67	3	6	20	17
Aurora.....	5		9	213	15	177	19		1	2	
Elgin.....	2		4	37	24	181	23	1		9	
Kankakee County.....	29	6	11	106	53	118	86	2	8	39	6
Kankakee.....	26		2	15	15	70	63	1	4	8	
Kendall County.....		2	6	41	7	44	2			1	
Knox County.....	46	2	27	234	38	61	9		2	4	4
Galesburg.....	44	2	6	41	7	44	2			1	

## PRINCIPAL COMMUNICABLE DISEASES REPORTED IN ILLINOIS—Continued.

	(1)	(4)	(5)	(6)	(7)	(8)	(9)	(61C)	(63D)	(28-35)	(91-92)
Counties with important cities and towns.	Typhoid Fever.	Malaria.	Smallpox.	Measles.	Scarlet Fever.	Whooping Cough.	Diphtheria.	Meningitis.	Polionyelitis.	Tuberculosis and Chronic Bronchitis.	Pneumonia.
Lake County.....	66	1	4	185	118	143	59	10	3	16	3
Waukegan.....	28		1	21	23	10	16	4	2	3	
LaSalle County.....	23		18	783	34	175	241	1	6	20	24
LaSalle.....	10		1	348	6	51	59		1	10	
Ottawa.....	1		6	5		9					
Streator.....	1		6	1	7		38		2	2	
Lawrence County.....	31	29	52	40	4	116	3	3		9	5
Lee County.....			6	67	11	43	3		1	6	5
Livingston County.....	24	2	5	99	30	57	18		3	5	7
Logan County.....	7	6	35	111	15	51	26		2	18	6
Lincoln.....	5	6	16	8	5	35	22		1	17	
Macon County.....	100		59	81	40	124	18	1	2	2	1
Decatur.....	96		30	46	32	71	14	1			
Macoupin County.....	29	1	222	88	74	134	36	22	4	6	7
Madison County.....	38	1	567	233	111	218	244	1	6	21	1
Alton.....	25		297	43	25	58	69		2	4	
Granite City.....			58	48	37	16	55			3	
Marion County.....	14		57	10	18	117	18			11	
Centralia.....			2			11	1				
Marshall County.....		1	9	465	10	1	1	1			3
Mason County.....	4		39	35	66	11			1	3	
Massac County.....	5	9	18	16	1	10	16			10	2
McDonough County.....	17	3	74	479	59	52	15			2	20
McHenry County.....	30		1	67	18	133	30	3	7	9	5
McLean County.....	12	22	47	183	17	177	44	2	4	18	30
Bloomington.....	5		14	9	7	81	14		4	8	
Menard County.....	4	3	8	111	3	20	3			3	
Mercer County.....	5		5	242	92	34			8	2	
Monroe County.....	7		8	3	9		4				1
Montgomery County.....	8	5	52	79	32	25	24			4	4
Morgan County.....	79		36	87	62	91	7			10	
Jacksonville.....	35		18	54	58	32	4			5	
Moultrie County.....	3	3	11	34	16	19	2		1	2	2
Ogle County.....	4		14	194	23	52	15			52	7
Peoria County.....	9		281	259	95	135	266	3		1	2
Peoria.....	7		203	175	59	91	224	3		1	
Perry County.....	8	1	42	7	20	6	20	1		5	2
Platt County.....	8		9	10	21	107	7			9	11
Pike County.....	13	12	77	144	29	15	14	1		3	10
Pope County.....		18			2	8	9			1	2
Pulaski County.....	3	59	15	38	8	18		1	1	1	1
Putnam County.....		1	19	11			25	1		3	
Randolph County.....	26	24	148	26	38	163	25		1	5	2
Richland County.....	3	7	4	38	11	30	2			4	
Rock Island County.....	157		44	1,151	193	250	142	2	18	15	
Moline.....	116		4	479	73	95	76		5	8	
Rock Island.....	11		8	470	74	115	59	2	8	10	
Saline County.....	12	35	419	125	3	7	36	6	1	7	14
Sangamon County.....	72	49	111	979	35	206	47	10	3	43	26
Springfield.....	61	44	95	682	18	151	34	9	2	19	14
Schuyler County.....	4		4	102	10	26	4		1	1	
Scott County.....	4			12	3	44	8			2	1
Shelby County.....	10		37	210	12	44	7	2		2	3
Stark County.....		2	29	21	13	13					
St. Clair County.....	17	11	436	305	161	90	216	2	1	4	5
Belleville.....	2		133	145	71	16	87			2	
East St. Louis.....	10		133	61	25	16	110	2	1		
Stephenson County.....	12		21	79	24	13	26		3	52	
Freeport.....	9		11	43	12	10	10		3	49	
Tazewell County.....	18	2	50	128	18	74	36	2	1	27	3
Pekin.....	2	2	5	6	3	15	1				
Union County.....	24	37	66	29	2	51	10			6	
Vermilion County.....	45	8	66	916	58	370	77	7	9	58	18
Danville.....	30	1	41	707	6	109	20	2	1	34	
Wabash County.....	6	10	10	19	28	185	9	4		11	9
Warren County.....	16		18	515	7	54	3	2		1	9
Monmouth.....			7	148	6	12	3			1	6
Washington County.....	12	2	5	226	59		15		1	4	2
Wayne County.....	8	1	9	186	7	5	11			8	5

## PRINCIPAL COMMUNICABLE DISEASES REPORTED IN ILLINOIS—Concluded.

Counties with important cities and towns.	(1) Typhoid Fever.	(4) Malaria.	(5) Smallpox.	(6) Measles.	(7) Scarlet Fever.	(8) Whooping Cough.	(9) Diphtheria.	(61C) Meningitis.	(63D) Polionmyelitis.	(28-35) Tuberculosis and Chronic Bronchitis.	(91-92) Pneumonia.
White County.....	13	45	15	20	1	25	9	.....	.....	5	.....
Whiteside County.....	4	5	17	107	118	52	15	.....	2	4	5
Will County.....	17	2	7	523	159	177	161	5	2	11	10
Joliet.....	6	.....	4	177	45	104	73	1	1	5	.....
Williamson County.....	29	.....	330	436	26	87	45	6	5	15	12
Winnebago County.....	8	.....	82	715	726	124	106	16	.....	27	184
Rockford.....	5	.....	37	559	155	87	42	6	.....	27	.....
Camp Grant.....	.....	.....	.....	10	529	3	57	6	.....	.....	32
Woodford County.....	2	.....	14	484	7	85	3	11	1	7	12
Total.....	1,942	835	6,278	20,498	7,584	14,306	11,000	568	883	13,417	6,296

NOTE.—The foregoing table was made from daily reports. That on page 457 was made from daily reports and replies to questionnaires and special investigations, and in some instances this led to discovery of many unreported cases.



particularly true of malaria, measles, whooping cough, tuberculosis and pneumonia), it was deemed advisable to base the figures of communicable disease cost upon the deaths caused by them, estimating the numbers of cases on a basis established in epidemiological experience. Even so, the figures are low. While the reports of deaths are now sufficiently complete to have caused the recognition of Illinois as a registration State by the Federal Bureau of the Census, there are still some sections of the State in which deaths are not fully reported in accordance with the law. In fact, it may be stated that the numbers of deaths upon which these figures are based are perhaps seven per cent lower than the actual deaths.

In computing the financial cost of communicable diseases, the following items have been taken into consideration: (1) Cost of funerals, placed at \$100.00 for adults and \$50.00 for children; (2) value of a life lost, at \$3,000.00 for an adult and \$500.00 for a child; (3) cost of care of those who recover including medical service, varying with the nature and duration of the disease; (4) loss of wages for adults. The table used in computing costs is as follows:

Disease.	Funeral.	Life value.	Cases per each death.		
			Number.	Care.	Time.
Typhoid .....	\$100	\$3,000	10	\$ 75	\$ 125
Malaria .....	100	3,000	200	10	150
Smallpox .....	100	3,000	-----	20	75
Measles .....	50	500	50	10	-----
Scarlet fever .....	50	500	30	25	-----
Whooping cough .....	50	500	60	10	-----
Diphtheria .....	50	500	10	25	-----
Meningitis .....	75	1,500	4	25	35
Poliomyelitis .....	50	500	5	50	-----
Tuberculosis .....	100	3,000	5	600	1,400
Pneumonia .....	100	3,000	4	75	60

The cost of communicable diseases in a community is an index of the economic efficiency of that community. As a rule, death rates are high in old communities partly because the people are old. Death rates are lower in places which are rapidly growing because the immigrants are likely to be strong and young. The community cost of communicable diseases is a factor in determining the actual cost of labor in that community. Regardless of the wages paid in dollars and cents, such wages are materially increased and efficient production is decreased when employees are irregular in their work and this wage cost is tremendously increased when factories or business enterprises have to be closed on account of health conditions.

In considering a change of location, or in seeking a new location for a school or factory, one of the most important elements to be considered is the cost of communicable diseases. It has as definite a bearing upon operative expense as fuel or water supply or fire protection.

Aside from the governmental side of the proposition, chambers of commerce and all local organizations which have for their object the upbuilding of local business, should study carefully these estimates that they may determine to what extent they are able to offer personal safety to employees and economical operation to employers.

## DIVISION OF TUBERCULOSIS

GEORGE THOMAS PALMER, M. D., *Acting Chief*

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The Division of Tuberculosis is one of the new divisions made possible through the enactment of the Civil Administrative Code. The division was created on July 1, 1917, just in time to prove itself of inestimable value in meeting the constantly increasing wartime tuberculosis problem.

The experience of the warring nations of Europe—the development of thousands of cases of tuberculosis in the military service and even greater increase in the “industrial army” and in the civil population—is being repeated, to a considerable extent, in the United States and in Illinois, and, in addition to this, the medical examinations of the selective draft have brought to light thousands of previously unsuspected cases among the young men of the Nation and of the State.

As these pages are written, there are already approximately 1,500 soldiers returned to Illinois on account of tuberculosis and the numbers are rapidly increasing.

In meeting this overwhelming war problem, Illinois has been singularly handicapped. Unlike most of the other states of the Union, Illinois has never had a State tuberculosis sanatorium. While the enactment of the Municipal Tuberculosis Sanitarium Law (1917) and the County Tuberculosis Sanitarium Law (1915) gave to the State the legal means of creating machinery of a superior type to meet its tuberculosis needs, such machinery has not yet been created to meet even the ordinary requirements of peace times. In fact, while it is estimated that there are upward of 50,000 cases of active tuberculosis in the State outside of the Chicago district, there are but 250 beds for tuberculous patients in the same area, most of these being in private sanatoria operated at relatively high rates.

Added to this tremendous normal demand for sanatorium beds, which is the more keenly felt as education increases, there have been added during the past year the thousands of cases newly discovered by the draft boards and the upward of 1,500 men with the disease sufficiently pronounced to cause them to be discharged from military service and returned to their home communities. This does not take into account the rapid increase of the disease in the industrial population, due to the speeding up of all manufacturing activities, and in the civil population, on account of the prohibitive cost of feed and other disturbed social conditions.

In the treatment of tuberculosis, more than in any other human ailments, save the mental and nervous disorders, institutional care is imperative, not only as a means for the protection of the public and the physical rehabilitation of the individual; but for the education and training of the patient, so that he may intelligently work out his ultimate cure at home without endangering those about him. Institutional care must be supplemented by tuberculosis dispensaries and visiting nurse service to adequately meet the community's tuberculosis problem. All of this machinery has been lacking in most sections of Illinois.

On account of the importance of tuberculosis as a military problem, on the one hand, and, on account of the constructive work already done by extra-governmental tuberculosis organizations, on the other hand, the newly created Division of Tuberculosis has affiliated its activities with State and Federal agencies especially concerned in dealing with this disease, such as the State Council of Defense, the American Red Cross, the Bureau of War Risk Insurance and the State and National Tuberculosis Associations. In this coordinated plan, the Department has been represented by the Assistant Director.

As a preliminary to intensive tuberculosis work, the State Department of Public Health promulgated rules and regulations for the control of tuberculosis, requiring the reporting of the disease and imposing certain restrictions for the protection of the public. These rules are responsible for an increase of 50 per cent in the number of cases of tuberculosis of the lungs reported during the past year, as compared with the reports of any previous year in the history of the department.

The so-called "Illinois Program" for meeting the tuberculosis war problem, prepared by the affiliated governmental and extra-governmental agencies, has been formally adopted by at least ten other states and has been recommended for general adoption by the National Tuberculosis Association. The important features of this program and the extent to which they have been carried out may be summarized briefly as follows:

#### \*1. INCREASING SANATORIUM FACILITIES

Campaigns are being carried on in thirty-three Illinois counties for the establishment of county tuberculosis sanatoria,<sup>1</sup> to be voted upon at the autumn election of this year. Assistance had been rendered in securing the establishment of sanatoria in seven counties<sup>2</sup> previously and in designing and locating sanatoria in some of these counties.

<sup>1</sup> As these pages are going to press, it is announced that the County Tuberculosis Sanitarium measure carried by large majorities in all of the 33 counties in which it was submitted. The counties creating tuberculosis sanatoria at this election are: Boone, Bureau, Christian, Clark, Clay, DeWitt, Coles, Crawford, DeKalb, Douglas, Fulton, Grundy, Henry, Jackson, Jefferson, Kane, Lee, Logan, McDonough, Macon, Madison, Marion, Piatt, Pike, Randolph, Scott, Stephenson, Tazewell, Vermilion, Whiteside, Will, Winnebago and Woodford.

<sup>2</sup> The counties voting favorably on the County Tuberculosis Sanitarium in the autumn of 1916 are: Adams, Champaign, Morgan, McLean, Ogle, Livingston, and LaSalle.



## 2. SECURING COMMUNITY NURSES

Community nurses, essential in all public health work, as well as in tuberculosis work, are being employed in a large number of communities throughout the State. The agitation toward this end, particularly by volunteer tuberculosis agencies, has resulted in the raising of funds for nursing service in a large number of communities for which nurses cannot be obtained. This shortage of nurses has been brought about largely by the demands for military service. To supply this demand for community nurses in the smaller communities, the State Department of Public Health, the State Department of Public Welfare and the Illinois Tuberculosis Association have established a school for public health nurses, giving brief but unusually comprehensive courses. There are no tuition fees and the courses are given several times in each year.

## 3. IMPROVED MEDICAL EXAMINATION

On account of the importance of excluding tuberculous individuals from military service and the necessity for greater medical knowledge in the care of returned tuberculous soldiers, the State Department of Public Health, in conjunction with the Illinois Tuberculosis Association, has conducted a series of clinical conferences on the diagnosis and treatment of tuberculosis, utilizing the best known teachers of this subject in the middle west. These conferences have been attended by physicians from all sections of the State. Special tuberculosis clinics have also been given before a large number of county medical societies in the State.

## 4. CARE OF RETURNED TUBERCULOUS SOLDIERS

Shortly after the mobilization of troops began, the first soldiers discharged on account of tuberculosis, returned to Illinois. These unfortunates have rapidly increased in number until, at the present time, there are over 1,500 returned tuberculous soldiers in the State. This number will steadily increase so long as the war lasts.

The distribution of these returned tuberculous soldiers to the several counties of the State is shown in the following table:

## RETURNED TUBERCULOUS SOLDIERS

Adams .....	15	Cook .....	639	Greene .....	3	Kankakee .....	9
Alexander .....	17	Crawford .....	6	Grund .....	8	Kendall .....	4
Bond .....	3	Cumberland .....	2	Hamilton .....	4	Knox .....	12
Boone .....	0	DeKalb .....	5	Hancock .....	4	Lake .....	8
Brown .....	3	DeWitt .....	8	Hardin .....	2	LaSalle .....	11
Bureau .....	4	Douglas .....	3	Henderson .....	2	Lawrence .....	5
Calhoun .....	1	DuPage .....	6	Henry .....	4	Lee .....	3
Carroll .....	5	Edgar .....	8	Iroquois .....	4	Livingston .....	3
Cass .....	6	Edwards .....	4	Jackson .....	7	Logan .....	4
Champaign .....	10	Effingham .....	8	Jasper .....	5	McDonough .....	2
Christian .....	5	Fayette .....	3	Jefferson .....	13	McHenry .....	4
Clark .....	9	Ford .....	1	Jersey .....	11	McLean .....	13
Clay .....	6	Franklin .....	16	JoDavies .....	7	Macon .....	5
Clinton .....	6	Fulton .....	7	Johnson .....	7	Macoupin .....	16
Coles .....	11	Gallatin .....	5	Kane .....	17	Madison .....	32

## RETURNED TUBERCULOUS SOLDIERS—Concluded.

Marion .....	5	Peoria .....	21	Sangamon ....	37	Wabash .....	4
Marshall .....	2	Perry .....	6	Schuyler .....	3	Warren .....	0
Mason .....	1	Piatt .....	1	Scott .....	0	Washington ...	3
Massac .....	9	Pike .....	7	Shelby .....	8	Wayne .....	12
Menard .....	2	Pope .....	4	St. Clair .....	45	White .....	4
Mercer .....	5	Pulaski .....	4	Stark .....	2	Whiteside .....	5
Monroe .....	4	Putnam .....	1	Stephenson .....	6	Will .....	9
Montgomery ..	11	Randolph .....	13	Tazewell .....	7	Williamson ....	27
Morgan .....	2	Richland .....	2	Union .....	9	Winnebago ....	18
Moultrie .....	1	Rock Island .....	15	Vermilion .....	23	Woodford .....	2
Ogle .....	4	Saline .....	20				

On account of the inadequate facilities for the care of the tuberculous in Illinois, many of these returned soldiers have been subjected to neglect, in some instances to the extent of their being permitted to die in almshouses. To meet the needs of these young men, to whom our patriotic obligation is unquestioned, a working agreement was entered into between the State Department of Public Health, the American Red Cross and the Illinois Tuberculosis Association, whereby the Department and the Tuberculosis Association are providing for the scientific examination and medical direction of these returned soldiers while the Red Cross is making other provision for them.

The progress made under this plan for the proper medical provision of these soldiers, at the end of the fiscal year, is indicated in the following table:

## MEDICAL CARE OF RETURNED TUBERCULOUS SOLDIERS

Disposition of soldiers returned to Illinois on account of tuberculosis, given medical care through a contract between the State Department of Public Health, the Illinois Tuberculosis Association and the Central Division of the American Red Cross.	
Total number of tuberculous soldiers returned to Illinois.....	1,415
Number returned to Chicago <sup>1</sup> .....	600
Number returned to State outside Chicago.....	815

## DISPOSAL OF CASES OUTSIDE CHICAGO

Number reported returned and awaiting first contact by American Red Cross.	259
Number investigated by Red Cross and awaiting diagnosis and outline of treatment .....	151
Number diagnosed awaiting permanent treatment.....	99
Number diagnosed and under home treatment.....	83
Number diagnosed and under treatment in Illinois sanatoria.....	33
Cases arrested or discharged from sanatoria.....	19
Deaths .....	14
Removed to other states.....	129
Unable to locate.....	28
Total in Illinois outside Chicago.....	815

<sup>1</sup> Returned tuberculous soldiers residing in the city of Chicago are handled direct from the office of the Central Division of the American Red Cross through the Chicago Chapter of the Red Cross and the Chicago Municipal Tuberculosis Sanitarium.

## 5. TUBERCULOSIS SURVEYS

To secure a more definite idea of the extent of the tuberculosis problem in Illinois, the Division of Tuberculosis has outlined a plan of tuberculosis survey so simple that it may be readily employed by nurses, social workers or intelligent laymen. Through this plan, a large number of tuberculosis surveys have been made in various localities in the State.

## DIVISION OF SANITATION

PAUL HANSEN, *Chief Sanitary Engineer*<sup>1</sup>

HUBERT P. MATTE, *Acting Chief Sanitary Engineer*

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Through appropriations made by the Fiftieth General Assembly, it became possible to add two assistant engineers and two stenographers to the original staff of the Engineering Department of the State Board of Health, which the Division of Sanitation had succeeded. Thus the newly created or reorganized division started its work with one chief engineer, one analyst, three assistant engineers and three stenographers. From the beginning, however, the work of the division has been retarded by the enlistment of important members of its staff in military service and by the difficulty of securing engineers and other technical workers.

As soon as war was declared, the chief engineer volunteered for military service and is now in France and he was followed, some months later, by one of the assistant engineers and the analyst.

### ACTIVITIES IN MILITARY ZONES

Not only was the division handicapped by this shortage in its staff, but the work ordinarily carried on had been greatly increased by the location of several large military camps or cantonments within the State, about each of which the department has established a sanitary zone. The division has devoted a large amount of time in these sanitary zones investigating water supplies, the disposal of sewage and other wastes and in otherwise safeguarding the health of the troops. Especially exhaustive investigations were made in the vicinity of Camp Grant and in and about the city of Rockford. The sanitary survey of the entire Kishwaukee River, used for bathing purposes by the soldiers at Camp Grant, brought about improved sanitary conditions of the utmost importance.

In cooperation with other divisions of the department, the Division of Sanitation engaged in the general sanitary survey of the city of Rockford, making a study of the local water supply, and sewage and garbage disposal. Detailed inspections were made of the twenty-seven Rockford schools to ascertain their sanitary conditions.

Sanitary surveys or investigations, for the protection of military forces, have also been made in the zones about Fort Sheridan, the Great Lakes Naval Training Station, the Chanute Field at Rantoul and the

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<sup>1</sup> Absent on military service.

Scott Field at Belleville. A general sanitary survey, similar to that conducted in the vicinity of Rockford, was carried out at Waukegan, North Chicago and the vicinity surrounding Fort Sheridan and the Great Lakes Training Station. In this survey, the Division of Sanitation made studies of garbage disposal, water supplies and sewerage systems and conducted inspections of twenty school houses.

#### LABORATORIES

While an effort has been made in the past to establish laboratories for the use of the Division, this had been impossible on account of deficient appropriations until July 1, 1917. Prior to that time, much of the laboratory work essential to a division of sanitary engineering was done by another State department with laboratories situated a considerable distance from Springfield.

The Civil Administrative Code directly charges the Department of Public Health with the maintenance of laboratories and the Fiftieth General Assembly provided funds for this purpose. Analyses are now being made of the various public water supplies and of as many private supplies as time will permit. The laboratory is also making analyses of water used on interstate carriers, this work being done at the request of the United States Public Health Service.

On account of the difficulty in securing laboratory supplies and equipment, the laboratory of the Division of Sanitation was not completely installed until the late autumn of 1917. Since that time analyses have been made of approximately 250 specimens taken from municipal water supplies and approximately 200 from private water supplies.

#### ORDINANCES

In addition to its investigations and other technical activities, the Division of Sanitation has extended its services to municipalities in the preparation of ordinances covering various phases of municipal sanitation. Model plumbing ordinances were drafted and distributed in response to the numerous requests arising from the passage of the Plumbing Code by the Fiftieth General Assembly.

#### PUBLICITY

As a means of publicity and education, the division has prepared an exhibit including sanitary privies, models of improperly and properly constructed wells, fly traps and a map showing the sanitary condition of all of the public water supplies of the State.

This exhibit in conjunction with the general exhibits of the department, has been shown at the Illinois State Fair, at county fairs throughout the State, and in a number of communities where special public health activities were being carried out.



## SANATORIA

The Division of Sanitation has cooperated with the Division of Tuberculosis in passing upon the sites and sanitary installations of proposed county tuberculosis sanatoria.

In view of the fact that a large number of counties will vote upon the county tuberculosis sanitarium proposition at the autumn election of 1918 with a strong probability that the measure will carry in most instances, it is not unlikely that this phase of the activities of the Division of Sanitation will be extended very materially during the next two years.

## INVESTIGATIONS

During the year, representatives of the division visited 175 communities in the State. Of these communities, 40 were visited to investigate public water supplies and 50 for the purpose of studying sewage disposal and the abatement of sewage nuisances. Public addresses devoted to problems of sanitation were given in ten communities. In addition to the sanitary surveys mentioned above, eighteen other sanitary surveys were made covering more or less extensive areas. Sanitary investigations were made in fifty-five public schools.

## STATE HOUSE WATER SUPPLY

The Division of Sanitation rendered valuable service in studying and working out a plan for supplying drinking water to the offices in the State House at Springfield. For a number of years, these offices had been supplied with water from a spring, located some distance from Springfield, and the water was transported by rail, necessitating more or less handling and entailing considerable cost. Through the installation of pressure filters and the use of water derived from the municipal supply of the City of Springfield, the State offices are now being supplied with a drinking water supply which is safer for use than that originally employed. In addition to this, the water is being furnished to the State in unlimited quantities at a saving of \$400.00 per month for the first year. Allowing for initial cost, it is reasonable to assume that this saving will amount to \$500.00 per month or more during succeeding years. The State offices are now consuming approximately 6,500 gallon of drinking water per month, a consumption which is steadily increasing and which can be met under present working conditions with practically no increased cost of production.

## SANITARY REPORTS

During the year, there were prepared sixty-eight comprehensive reports and opinions based upon sanitary investigations or surveys. In many instances the studies upon which these reports were based required very considerable time and technical work. In addition to the investiga-

tions personally made by the members of the staff, a great deal of advisory has been done by the Division of Sanitation through correspondence in response to requests for information, requiring the preparation of about two thousand letters many of which were necessarily prolonged in character.

#### ENGINEERING ACTIVITIES

Among the more important engineering activities of the year, were those undertaken for the purpose of securing a satisfactory water supply for the city of Jacksonville; the investigation of a serious epidemic of typhoid fever at Moline and a study of an intestinal epidemic, probably due to the water supply, at Peoria.

#### JACKSONVILLE WATER SUPPLY

Jacksonville, although one of the oldest cities in the State, has never had an adequate or satisfactory supply of water and this has been the more keenly felt by the State on account of the three important charitable institutions located there. Early in the year, exhaustive investigations were begun at Jacksonville, in cooperation with the State Geological Survey and the State Water Survey Divisions of the Department of Registration and Education. Based on these investigations, recommendations were made to the city in a report prepared by the Division of Sanitation and the two above named State divisions. The authorities have engaged engineers to prepare detailed plans of the proposed improvements and, at a recent election, the people voted favorably for the installation of a satisfactory water supply.

#### TYPHOID FEVER AT MOLINE

Toward the end of December, 1917, the Division of Sanitation undertook an investigation of the cause of a serious outbreak of typhoid fever at Moline. The first cases of the disease had appeared late in July, 1917, and there had been cases reported throughout August and September with greater numbers during October and November. During the first half of January, 1918, the disease assumed epidemic form with approximately 50 cases reported between the first and fifteenth of the month.

During the progress of the investigation suspicion pointed strongly toward the municipal water supply and, after certain remedial steps were taken, the epidemic seemed to abate in the latter part of January and the situation seemed practically clear during February and March.

During the month of April, 1918, the disease reappeared with an increased number of cases during May. Toward the latter part of June the disease began to assume epidemic form which increased in seriousness during the first half of July. Between the first and fifteenth of July 125 cases were reported.

With a recurrence of the epidemic, the Division of Sanitation placed its representatives in the field and undertook a more painstaking and exhaustive study of the situation. It was finally determined that the epidemic was due to the faulty operation of the municipal water plant whereby raw and untreated water from the Mississippi River had been permitted to enter the local supply.

As these pages are written, sometime after the end of the fiscal year, the disease is entirely checked in Moline and the conclusions of the Division of Sanitation are apparently confirmed.

During the study of the Moline typhoid fever epidemic, it was found that there is maintained in a number of the large industrial plants a double system of water supply, one being derived from the ordinary city service and the other drawn directly from its source and subjected to no treatment. It was also ascertained that in certain of these industrial plants there are communicating pipes between these two water supplies protected by valves so that the untreated supply may be drawn upon in case of shortage in the water from the municipal supply or in case of need for large volumes of water. It will be recalled that the serious epidemic of typhoid fever at the plant of the Elgin National Watch Company at Elgin was attributed to this dual water supply and the pollution of the pure water through leaky valves or interchange of service.

While the Moline epidemic was not traced to this dual water service, steps are being taken by the Division of Sanitation in conjunction with the business men and manufacturing interests at Moline and with the municipal health department to do away with this system which may at any time become a source of danger.

#### BELLEVILLE

In November, 1917, extensive investigations were made in connection with the aviation camp at Scott Field near Belleville, St. Clair County, for the purpose of installing a satisfactory method of sewage disposal. In May, 1918, a survey of the district surrounding Scott Field was made by representatives of the division together with the State Entomologist of the Natural History Division of the State Department of Registration and Education for the purpose of outlining a plan for the destruction of breeding places of mosquitos.

#### HURST, BUSH, AND ZEIGLER SURVEYS

On account of the serious sanitary conditions prevailing at Hurst and Bush, Williamson County, and Zeigler, Franklin County, and on account of the importance of these counties in connection with coal production essential to war-time needs, a complete sanitary survey was made in these communities as a result of which the Division of Sanitation presented to the local authorities and to the interested mining

companies recommendations for the betterment of conditions and for the protection of the health of the people.

#### EAST PEORIA

During February, 1918, a sanitary survey was undertaken at East Peoria, Tazewell County. This was rendered imperative on account of its proximity to Camp Herrin. The situation was rendered the more difficult on account of the fact that there was no provision for sewage disposal. Upon the recommendation of the Division of Sanitation, an ordinance was passed abolishing all privy vaults and requiring the use of the so-called dry can system for disposal of human excreta.

#### RANTOUL

During September, 1917, a special study was made of the water supply of the city of Rantoul, Champaign County, and of the water supply utilized at the aviation camp at Chanute Field. In view of the fact that the city of Rantoul had no sewer system, considerable time was expended in working out a means of proper sewage disposal for the military camp at Chanute Field.

#### EPIDEMIC AT PEORIA

Beginning about the middle of February, 1918, and continuing until the middle of March, Peoria was visited by a severe epidemic of gastrointestinal disorder. The first cases were noted on February 18 and two days later the outbreak became explosive. The number of cases was estimated at 30,000, at least one person in every household being reported as attacked by the disease. The epidemic resembled a mild paratyphoid infection. No cases of actual typhoid were located and in spite of the large number of cases no deaths resulted.

The Division of Sanitation placed its representatives in the field and made a prolonged investigation in order to trace the source of infection and in order to prevent a recurrence of the epidemic which might assume more malignant form, in which event it would cause a high mortality.

After rejecting all theories of infection from food or from contagion, the water supply seemed to be the only remaining causal factor. There were three possible sources of contamination of the water supply: (a) malicious contamination; (b) accidental contamination of the water in the main wells or reservoirs, and (c) the natural contamination due to a rapid rise in the river which might result in a pollution of the wells or underground supply. From the facts obtained, the probable cause of the contamination of the city water supply was the entrance of river water presumably through an underground route. This condition could have existed only temporarily, while the level of the ground water remained below the level of the river, the reverse of normal con-



ditions. It could not be said that any of these causes of the pollution of the water supply were demonstrated to exist, nor could it be definitely stated that the cause of the epidemic was traced to the water supply and laboratory examinations gave no conclusive evidence either of specific water pollution or of the nature of the infecting organism providing it existed in the water supply.

At any rate provisions were made for the disinfection of the water supply, should an emergency arise. The epidemic was very wide spread when it existed, but it receded with almost the same degree of rapidity with which it developed. Since that time no outbreak of like or similar character has been reported.

## DIVISION OF VITAL STATISTICS

SHELDON L. HOWARD, *Registrar of Vital Statistics*

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Until the present time, Illinois has been in the unenviable position of being one of the few of the larger states in the Union not recognized by the United States Bureau of the Census as in "the registration area." That is to say, the registration of both births and deaths in Illinois has been so inadequate that the vital statistics of the State have not been acceptable to the Federal Government. This unfortunate condition of affairs has been due in the past to faulty birth and death laws and to the impossibility of securing complete returns under the provisions of those laws.

### BIRTH AND DEATH ACT

On July 1, 1915, however, a new law enacted by the Forty-ninth General Assembly became effective under the provisions of which complete registration could be obtained. The machinery necessary under this law and the very small force available in the Bureau of Vital Statistics of the State Board of Health, made it impossible to place the law in operation before 1916. Under the provisions of the act, it was necessary to appoint about 2,500 local registrars, to define their districts, to instruct them in their duties and to prepare proper blanks and forms and to send these with instructions to registrars, physicians, midwives, and undertakers. This preliminary work was not completed until February, 1916.

Regardless of the excellent features of the law, it was soon ascertained that the office force available under existing appropriations was so small that little could be accomplished aside from routine clerical work and securing a fair degree of completeness of returns. It was not possible, with such a force, to carry out all of the provisions of the law and it was practically impossible to satisfy inquiries of a statistical nature or to tabulate the returns and furnish statistics which involved any degree of detail.

During this period of reconstruction, and shortage of office personnel, difficulty was encountered in maintaining the organization already perfected, especially the staff of over 2,000 local registrars. For the most part these registrars were the township, village and city clerks and the terms of office of fully one-third of these terminated at each election entailing the necessity of constant changes in the office records and constant instruction of new registrars as to their duties. Many

additional changes were caused by the army drafts and military enlistment.

#### AMENDMENTS OF 1917

By the time the Civil Administrative Code became effective, on July 1, 1917, the new birth and death law had been in effect a sufficient length of time to determine its weak points and to make possible an intelligent estimate as to the office and clerical force necessary for its operation. The Fiftieth General Assembly not only made more liberal appropriations for the division, but passed an amendment to the law eliminating the more objectionable features and requiring that all certificates of births, stillbirths and deaths be forwarded on the tenth day of each month to the State Department of Public Health.

#### ORGANIZATION

The newly-created Division of Vital Statistics was established under a Division Chief and Assistant Chief, taking over the office force and equipment of the Bureau of Vital Statistics of the State Board of Health.

Immediately upon the organization of the division, copies of the amended law were sent to all local registrars, and county clerks were furnished with lists of local registrars within their counties together with monthly report cards upon which to transmit to the Division of Vital Statistics the returns as made to them by local registrars. The use of these cards affords a check of the division records and permits a monthly balance to be kept between the books of the county clerk, of the local registrars and those of the Division of Vital Statistics. The county clerks thus aid the division in keeping informed as to delinquent registrars.

#### LOCAL REGISTRARS

The original division of the State into 2,500 registration districts proved unsatisfactory, the number of registrars being so great as to prove confusing rather than helpful. By a process of consolidation and rearrangement, the number of registrars has been reduced to 1,800. The Division of Vital Statistics has just issued a register of local registrars which has been sent to physicians, midwives, undertakers and to the local registrars. This register shows the boundaries of all districts, the names and locations of all registrars, a synopsis of the birth and death law, a summary of the instructions to registrars and a brief statement of the reasons for reporting births and deaths. It is expected that this register will aid in securing prompt and complete reports.

On account of the frequent changes in registrars and for the convenience of having the affairs of each registration district constantly available, there has been installed a set of registration books, now consisting of nine volumes, with a page devoted to each registrar, showing by months all essential information relative to the district for the

period of a year. These books provide a complete and constantly corrected list of local registrars; a running record of all changes in personnel with the dates when changes become effective; a comparison with the returns reported by county clerks so that vouchers for payment of fees may be properly audited and verified, and a view of the activity of each local registrar.

#### FIELD INVESTIGATIONS

For the purpose of assisting local registrars in the performance of their duties, and of checking up incomplete reports of births and deaths, two special agents for the Division of Vital Statistics were employed early in 1918 and were assigned to several sections of the State. It was through the first-hand information obtained by these special agents that the combination of registration districts was more intelligently carried out. These agents have also located a number of unlicensed physicians and midwives and have done much towards stimulating county clerks to devote more attention to their statistical records. In view of the many changes in personnel among registrars and other conditions requiring attention throughout the State, it seems that field work and inspection should be regarded as a permanent necessity.

As an example of the unusual and unexpected conditions brought to light by personal inspection, which otherwise would have remained undiscovered, may be mentioned certain isolated sections of the State in which not over 60 per cent of deaths and stillbirths had been reported for the reason that friends of the family purchased coffins from merchants, who were not licensed undertakers or embalmers, the bodies being buried without the slightest attempt to comply with the law. Merchants selling coffins direct to the friends or family of the deceased are now required to make complete report of such sales.

#### CARD INDEXING

The Birth and Death Act specifically provides for "a comprehensive card index of all births and deaths registered." The clerical work required in carrying out this provision of the law may be appreciated when it is known that, in the year 1917, 203,000 such cards were required, 112,000 for the registration of births, 5,000 for stillbirths and 86,000 for deaths. The mortuary and birth reports for 1918 are now being indexed, while the returns for 1917 are practically complete. It has been impossible thus far, however, to undertake such indexing for previous years.

#### MACHINE TABULATION

While the Division of Vital Statistics is now provided with equipment for machine tabulation, it has not been possible to carry out the punching of statistical cards to the maximum capacity of the machines. Special modifications in the cards have been made to meet peculiar re-



quirements and some progress has been made in punching the cards for 1916-1917. The delay in machine tabulation has been due to the necessity of devoting much time to the preparation of statistical reports required by other divisions of the Department of Public Health and other special services and also to the fact that only one person is allotted to machine work while two operators are necessary to the attainment of the highest degree of efficiency.

#### SPECIAL STATISTICAL REPORTS

During the year the Division of Vital Statistics has been called upon to prepare about thirty-five more or less elaborate statistical reports for the other divisions of the Department of Public Health, the Federal Government, and for a number of other governmental and extra-governmental agencies. Special service in this line has been rendered for the Children's Bureau of the United States Department of Labor, the State Health Insurance Commission, the Illinois Tuberculosis Association and other similar agencies.

#### EDUCATIONAL WORK

During the year, the Division of Vital Statistics, in cooperation with the Division of Public Health Instruction, has sought to educate the public as to the necessity for birth and death registration. To this end newspaper articles, motion pictures, stereopticon slides and similar educational agencies have been employed. A representative of the division has attended meetings of undertakers, embalmers, coroners and other county officials, and physicians and nurses to explain the requirements of the law regulating the reporting of births and deaths and in overcoming the objections which invariably arise in connection with new legislation.

The principal objections offered by physicians to the present birth and death law are: That there is no compensation for making reports; that they are called upon to provide postage at their own expense in rendering a gratuitous service, and that there is considerable uncertainty as to the indentity and location of the proper registrars. The first and second of these objections are being overcome through education and the sentiment of the leading spirits in the medical profession. The newly issued register of local registrars, copies of which have been sent to physicians and all others interested in the reports of births and deaths, will do much toward overcoming any uncertainty as to the location of registrars.

#### COMPENSATION FOR REGISTRARS

The adoption of the systems referred to above, with the decided improvements in the forms and methods of reports, has made it possible for the Division of Vital Statistics to forward statements of fees to local registrars at least a month earlier than was ever possible before.

## ENGRAVED BIRTH CERTIFICATES

As an incentive to parents to insist upon the registration of births, the State Department of Public Health now forwards to the parents of every child whose birth has been properly registered, an engraved certificate of birth registration. It is believed that this simple expedient is doing not a little toward increasing interest on the part of parents in this important phase of vital statistics.

## FEDERAL RECOGNITION

At about the close of the fiscal year, representatives of the United States Bureau of the Census came to Illinois for the purpose of studying the registration of births and deaths as carried out by the Division of Vital Statistics, to determine whether or not the State is entitled to recognition as being within the registration area. Just as these pages are written, and some time after the close of the fiscal year, the Director of the Department has been advised that the division has satisfactorily met the test and that recognition as a "registration State" has been accorded. This, in itself, constitutes a most important step in the public health history of Illinois.

Owing to the crowded condition of the State House, the Division of Vital Statistics has been compelled to move from place to place, most of the time, during the past year, occupying one of the legislative committee rooms from which the division will necessarily have to be removed when the Fifty-first General Assembly convenes. During all of the past year, the quarters of the division have been unduly crowded and congested. It is believed that greater progress would have been possible if the division could have had a permanent home with adequate room for the housing of its extensive files and records.

## MORTUARY STATISTICS

On account of the incomplete returns of deaths in Illinois in previous years, it is impossible to compare the figures of the past fiscal year with those of any previous period. For the year ending June 30, 1918, Illinois had an estimated population of 6,276,364. The number of deaths reported for the year was 89,428, giving a mortality rate of 14.2 per 1,000 of population.

The mortality rates of other states with location and conditions similar to those prevailing in Illinois, for the same period of time, are not yet available, but the recently completed figures for 1916 from six neighboring states included in the registration area by the United States Bureau of the Census, give the following rates per 1,000 of population: Wisconsin, 11.8; Kentucky, 12.6; Missouri, 12.9; Indiana, 13.6; Ohio, 14.4; and Michigan, 15.1.

The rate per 1,000 of population for the city of Chicago was 13.6, or lower than that of the State at large. The rates for other principal

MORTALITY RECORD OF ILLINOIS. DEATHS, EXCLUSIVE OF STILLBIRTHS, FROM ALL CAUSES, AND FROM DISEASES OF MAJOR SANITARY IMPORTANCE, BY COUNTIES, AND PRINCIPAL CITIES AND TOWNS, JULY 1, 1917, TO JUNE 30, 1918. INCLUSIVE.

NOTE.—Numbers in parenthesis at heads of columns refer to titles in the Manual of the "International List of Causes of Death," Second Revision—Paris, 1909. (Detailed List.)

Counties with important cities and towns.	Estimated population Jan. 1, 1918.	(1-189) Deaths all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.												(91-92) Pneumonia—All forms.
				(1) Typhoid Fever.	(4) Malaria.	(5) Smallpox.	(6) Measles.	(7) Scarlet Fever.	(8) Whooping Cough.	(9) Diphtheria.	(61C) Cerebro-spin. Fever.	(63D) Acute Ant. Polio-myel.	(25-29) Pul. Tuberculosis.	(30-31-32-33-34-35) Tuberculosis—Other forms.	(90) Chronic Bronchitis.	
The State.....	6,276,364	89,428	14.2	581	115	15	351	251	708	1,527	240	338	7,481	921	259	8,277
Adams County.....	164,588	937	14.5	14	1	.....	3	4	.....	10	1	2	56	3	11	68
Quincy.....	36,849	568	15.1	6	.....	.....	3	2	.....	9	.....	.....	41	2	4	42
Alexander County.....	25,361	416	16.4	11	6	.....	2	2	3	2	.....	.....	54	6	.....	39
Cairo.....	16,096	336	20.9	5	3	.....	1	1	3	.....	.....	.....	60	6	.....	53
Bond County.....	17,851	158	8.9	2	.....	.....	2	1	.....	1	.....	.....	20	1	2	15
Boone County.....	115,481	133	8.6	.....	.....	.....	.....	.....	.....	1	.....	1	6	.....	5	10
Brown County.....	110,397	106	10.2	2	.....	.....	.....	2	.....	1	.....	.....	8	.....	1	9
Bureau County.....	46,354	424	9.1	5	.....	.....	4	1	4	3	1	1	21	1	4	50
Calhoun County.....	18,610	65	7.5	4	.....	.....	.....	1	1	2	.....	.....	10	.....	2	8
Carroll County.....	18,035	173	9.6	1	.....	.....	.....	.....	.....	.....	.....	1	11	.....	1	11
Cass County.....	17,487	208	11.8	1	.....	.....	2	.....	.....	3	.....	.....	12	.....	5	15
Champaign County.....	55,113	591	10.7	3	.....	.....	1	4	6	4	1	1	43	5	.....	45
Champaign.....	16,323	193	12.6	.....	.....	.....	.....	8	1	1	.....	.....	14	.....	.....	16
Urbana.....	10,306	140	13.6	1	.....	.....	.....	.....	.....	.....	.....	.....	13	.....	.....	13
Christian County.....	235,305	431	12.2	2	1	1	1	3	5	2	2	1	32	5	2	51
Clark County.....	123,517	241	10.2	1	.....	.....	.....	.....	.....	.....	.....	.....	13	.....	2	18
Clay County.....	118,661	182	9.8	.....	.....	.....	2	.....	3	2	.....	1	15	.....	3	20
Clinton County.....	25,178	263	10.4	2	1	.....	.....	1	3	4	1	1	17	.....	1	38
Coles County.....	34,806	437	12.6	3	.....	.....	7	.....	.....	.....	.....	.....	26	5	.....	31
Mattoon.....	12,342	226	17.6	2	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	1	19
Cook County.....	2,847,434	49,567	17.4	57	3	5	73	142	272	1,058	173	216	4,148	589	20	4,532
Chicago.....	2,571,941	34,935	13.6	46	3	.....	72	150	229	959	171	193	3,327	548	(*)	4,078
Chicago Heights.....	24,070	321	13.3	4	.....	.....	.....	.....	.....	32	.....	.....	14	.....	.....	17
Cicero.....	4,212	322	15.1	.....	.....	.....	1	1	2	12	1	.....	54	.....	.....	51
East St. Louis.....	29,666	366	12.4	1	.....	.....	.....	1	.....	5	.....	.....	17	.....	4	57
Evansville.....	11,238	96	8.6	.....	.....	.....	.....	.....	3	.....	.....	.....	8	.....	2	7
Maywood.....	11,238	96	8.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

## MORTALITY RECORD OF ILLINOIS—Continued.

Counties with important cities and towns.	Estimated population Jan. 1, 1918.	(1-189) Deaths all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.										(90) Chronic Bronchitis.	(91-92) Pneumonia—All forms.
				(1) Typhoid Fever.	(4) Malaria.	(5) Smallpox.	(6) Measles.	(7) Scarlet Fever.	(8) Whooping Cough.	(9) Diphtheria.	(61C) Cerebro-Spin. Fever.	(63D) Acute Ant. Polio-myel.	(28-29) Pul. Tuberculosis.	(30-31-32-33-34-35) Tuberculosis—Other forms.	
Oak Park.....	528,398	454	16.0	1	1	1	1	4	2	9	1	1	16	2	39
Blue Island.....	9,548	184	19.3	2	1	1	1	1	1	6	1	1	7	2	22
Elgin.....	628,742	251	7.9	4	1	1	1	1	1	3	1	1	22	2	25
Grayford County.....	31,778	148	10.4	2	1	1	1	1	7	1	1	1	20	2	13
Cumberland County.....	114,281	361	10.4	3	1	1	1	3	11	3	1	1	22	5	1
DeKalb County.....	34,783	361	11.0	3	1	1	1	2	7	2	1	1	5	1	72
DeKalb.....	6,816	110	11.0	1	1	1	1	1	1	1	1	1	9	1	19
DeWitt County.....	118,906	207	11.0	1	1	1	1	1	5	1	1	1	11	2	12
Douglas County.....	19,976	166	8.3	1	1	1	1	1	1	1	1	1	22	3	24
Dupage County.....	37,516	343	9.1	1	1	1	1	1	1	1	1	1	20	6	17
Edgar County.....	127,336	298	10.9	2	1	1	1	1	3	2	1	3	22	1	6
Edwards County.....	110,049	87	8.7	1	1	1	1	1	1	1	1	1	11	3	22
Effingham County.....	120,055	232	11.6	4	1	1	1	1	4	6	1	1	19	3	20
Fayette County.....	28,083	257	9.2	6	1	1	1	2	3	2	1	1	40	4	13
Ford County.....	17,096	147	8.6	1	1	1	1	1	2	1	1	1	14	2	36
Franklin County.....	30,834	510	16.5	11	3	3	3	1	10	12	1	1	35	4	10
Fulton County.....	52,163	531	10.2	6	1	1	1	1	4	2	1	1	10	2	7
Canon.....	14,062	146	10.4	1	1	1	1	7	3	2	1	1	17	1	25
Gallatin County.....	114,628	125	8.5	2	2	2	3	1	4	3	1	1	15	4	18
Greene County.....	122,363	263	11.8	2	4	3	3	1	2	1	1	3	15	1	21
Grundy County.....	24,181	171	7.1	1	1	1	1	1	1	1	1	1	9	1	7
Hamilton County.....	18,227	163	8.9	2	2	2	1	1	2	3	1	1	15	1	6
Hancock County.....	130,638	263	8.6	5	2	2	2	1	3	3	1	1	23	5	51
Hancock County.....	17,015	93	13.3	5	2	2	2	1	3	3	1	1	15	1	13
Hardin County.....	19,794	80	8.3	1	1	1	1	1	1	1	1	1	9	1	18
Henderson County.....	43,054	80	8.3	5	1	1	1	1	1	1	1	1	2	1	21
Henry County.....	16,466	460	13.4	5	1	1	1	1	6	3	1	1	23	5	6
Kewanee.....	16,466	207	12.7	4	1	1	1	1	1	1	1	1	8	1	51
Iroquois County.....	135,543	239	10.4	4	1	1	1	1	5	9	1	1	12	2	29
Jackson County.....	36,135	406	11.2	4	6	2	2	1	1	5	1	1	11	2	36
Jasper County.....	118,157	141	7.8	3	1	1	1	1	1	1	1	1	44	1	14
Jefferson County.....	29,875	355	11.9	10	2	2	2	1	8	7	1	1	44	4	31
MT. Vernon.....	10,184	155	16.2	1	2	1	2	1	4	3	1	1	22	1	16
Jersey County.....	113,954	140	10.0	2	2	1	2	1	1	2	1	1	9	1	8



10	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
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## MORTALITY RECORD OF ILLINOIS—Concluded.

Counties with important cities and towns.	Estimated population Jan. 1, 1918.	(1-189) Deaths all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.												(90) Chronic Bronchitis.	(91-92) Pneumonia—All forms.
				(1) Typhoid Fever.	(4) Malaria.	(5) Smallpox.	(6) Measles.	(7) Scarlet Fever.	(8) Whooping Cough.	(9) Diphtheria.	(61C) Cerebro-spin. Fever.	(63D) Acute Ant. Polio-myel.	(28-29) Pul. Tuberculosis.	(30-31-32-33-34-35) Tuberculosis—Other forms.			
Perry County.....	23,849	292	12.2	8	3	.....	1	2	12	3	.....	.....	22	2	5	21	
Piatt County.....	116,376	129	7.9	1	.....	.....	.....	.....	1	1	.....	.....	9	.....	.....	9	
Pike County.....	128,622	245	8.6	7	1	.....	2	.....	3	.....	.....	.....	30	3	.....	16	
Pope County.....	111,215	46	4.1	4	.....	.....	.....	.....	.....	1	.....	.....	3	.....	1	2	
Pulaski County.....	16,506	212	12.8	2	13	.....	4	.....	13	.....	.....	.....	31	1	.....	24	
Putnam County.....	9,757	80	8.2	.....	.....	.....	.....	.....	.....	1	.....	.....	7	.....	.....	10	
Randolph County.....	29,991	310	10.3	6	4	.....	2	1	5	5	.....	.....	41	4	.....	32	
Richland County.....	115,970	157	9.8	2	.....	.....	.....	.....	2	.....	.....	.....	16	2	.....	12	
Rock Island County.....	82,233	1,367	16.6	29	1	.....	15	5	15	17	7	.....	111	8	.....	176	
Rock Island County.....	27,976	458	16.4	13	.....	.....	6	6	9	9	.....	.....	25	6	.....	64	
Rock Island.....	30,489	494	16.2	8	7	.....	7	.....	6	8	7	.....	38	.....	.....	58	
Saline County.....	36,853	430	11.7	12	4	3	.....	.....	10	17	.....	.....	45	4	.....	48	
Sangamon County.....	106,189	1,228	11.6	20	.....	.....	13	.....	9	7	2	.....	110	17	.....	105	
Sangamon County.....	63,375	916	14.5	20	.....	.....	9	.....	5	5	.....	.....	67	16	.....	77	
Schuyler Co.....	114,852	120	8.1	1	.....	.....	3	.....	4	1	1	.....	3	2	.....	9	
Scott County.....	110,067	60	6.0	1	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	5	
Shelby County.....	131,638	283	8.9	7	.....	.....	.....	1	4	.....	.....	.....	.....	.....	1	9	
Stark County.....	145,772	81	8.0	.....	.....	.....	4	.....	.....	.....	.....	.....	18	4	.....	22	
St. Clair County.....	176,4	1,764	12.1	17	10	1	7	3	18	24	.....	.....	2	.....	8	4	
St. Clair County.....	77,613	974	12.5	6	7	.....	3	.....	2	.....	.....	.....	184	6	.....	196	
St. Clair County.....	21,167	345	16.3	5	8	.....	.....	7	15	16	.....	.....	24	.....	.....	27	
St. Louis.....	38,513	442	11.5	9	.....	.....	3	.....	2	.....	.....	.....	114	2	.....	130	
Stephenson County.....	21,844	309	15.6	3	.....	.....	.....	2	.....	.....	.....	.....	24	6	.....	35	
Stephenson County.....	34,654	339	9.8	5	.....	.....	.....	7	.....	.....	.....	.....	31	.....	.....	33	
Tazewell County.....	11,361	119	10.5	.....	.....	.....	1	.....	.....	.....	.....	.....	18	6	.....	33	
Union County.....	21,856	423	19.4	12	5	.....	3	1	13	.....	.....	.....	31	.....	.....	33	
Vermilion County.....	87,644	1,290	14.7	12	.....	.....	.....	2	12	11	2	.....	52	6	.....	20	
Wabash County.....	32,969	516	15.7	.....	.....	.....	2	.....	6	.....	.....	.....	87	15	.....	111	
Wabash County.....	16,731	165	9.9	7	1	.....	.....	1	3	.....	.....	.....	39	7	.....	48	
Warren County.....	23,428	229	9.8	.....	.....	.....	.....	.....	2	.....	.....	.....	9	1	.....	15	
Wayne County.....	118,759	137	13.1	1	.....	.....	5	.....	2	2	.....	.....	11	7	.....	7	
Wayne County.....	118,759	166	8.8	.....	.....	.....	2	.....	.....	.....	.....	.....	9	.....	.....	6	
Wayne County.....	125,697	210	8.2	6	4	.....	.....	1	5	.....	.....	.....	30	1	.....	18	
Wayne County.....	125,697	210	8.2	6	4	.....	.....	1	5	.....	.....	.....	30	1	.....	22	

White County.....	123,052	207	9.0	7	1	1	1	4	4	22	4	2	16
Whiteside County.....	134,507	382	11.1	2	1	1	1	3	3	21	1	6	21
Will County.....	91,869	1,120	12.2	14	1	1	10	3	31	21	7	4	120
<i>Joliet</i> .....	38,877	747	19.2	10	1	1	8	2	26	84	4	9	91
Williamson County.....	58,603	651	11.1	15	11	1	5	7	7	55	12	5	71
Winnebago County.....	75,101	1,148	15.3	8	1	1	9	10	10	85	9	5	148
<i>Rockford</i> .....	67,897	890	14.2	8	1	1	3	8	8	62	5	5	82
Woodford County.....	120,506	175	8.5	3	1	1	1	9	9	14	1	5	25
County total.....	(1)	89,428	.....	581	115	15	351	251	1,527	7,481	921	259	8,277

<sup>1</sup> Population April 15, 1910: decrease between 1900 and 1910: no estimate made.

<sup>2</sup> Based on population, as estimated by the Bureau of the Census as of July 1, 1917. Decrease between estimate of 1916 and 1917. No estimate for January 1, 1918 made.

<sup>3</sup> Figures not included in Chicago tabulation.

<sup>4</sup> Based on population as estimated by the Bureau of the Census as of July 1, 1916. Decrease between 1900 and 1910.

<sup>5</sup> Based on population as estimated by the Bureau of the Census as of July 1, 1917, and the population as of April 15, 1910.

<sup>6</sup> Major portion of Elgin City lies within Kane County. See Elgin City, Kane County, for Death Rate covering entire city.

<sup>7</sup> See Estimated Population as of January 1, 1918, for State, Page 487.

cities were: Quincy, 15.1; Cairo, 20.9; Champaign, 12.6; Urbana, 13.6; Mattoon, 17.6; Evanston, 12.4; Canton, 10.4; Kewanee, 13.4; Mt. Vernon, 15.2; Aurora, 15.8; Elgin, 13.2; Galesburg, 14.6; Waukegan, 10.4; LaSalle, 17.0; Ottawa, 16.3; Streator, 14.8; Lincoln, 25.8;\* Decatur, 13.2; Alton, 16.1; Centralia, 14.1; Bloomington, 15.8; Jacksonville, 32.5;<sup>1</sup> Peoria, 15.4; Moline, 16.4; Rock Island, 16.2; Springfield, 14.5; Belleville, 16.3; East St. Louis, 12.5; Freeport, 15.6; Danville, 15.7; Joliet, 19.2; Rockford, 14.2. The average rate for Illinois cities was 15.0 per 1,000 of population.

Certain counties show exceedingly low rates such as the following: Pope, 4.1; Lawrence, 5.5; Scott, 6.0; Marshall, 6.2; Johnson, 6.3; Grundy, 7.1; Macoupin, 7.3; Jasper, 7.8; Crawford, 7.9; and Livingston, 7.9. In considering these unusually low rates, it must be borne in mind that, while it is possible that, for some reasons difficult to determine, the rates are actually as low as given, there is still an element of uncertainty in mortuary returns. While the reports in Illinois are found to be over 93 per cent complete, there is still a deficiency in reports of 7 per cent. It is quite possible that this 7 per cent deficiency is due to failure to report deaths in relatively few counties and that the shortage in these counties may, consequently, be very high. It was in one of the counties named above, and in the one giving the lowest of death rates, that field representatives of the Division of Vital Statistics found that many persons were being buried without employing undertakers, the coffins being purchased from local merchants and the burials carried out by relatives and family friends. In these cases, no record of death was made and the mortuary figures were very incomplete.

Due consideration should also be made in reviewing the figures in those counties and cities where the death rate appears to be unduly high. In the city of Kankakee, the rate is 22.7 per 1,000 of population; in Lincoln 25.8; in Morgan County 20.3; and in the city of Jacksonville 32.5; in Union County 19.4; and in Joliet 19.2. It must be borne in mind that Kankakee contains a large State hospital for the insane; that at Lincoln there is located the State colony for the feeble-minded; that Jacksonville, Morgan County, is the seat of several large State institutions; that at Joliet is located a State prison and at Anna, Union County, there is a State hospital for the insane. A new form of death certificate now being prepared, will differentiate clearly between residents and non-residents and these misleading figures will be corrected.

<sup>1</sup> The excessively high rates of Lincoln and Jacksonville are due to the location in these cities of large State institutions, the deaths in these institutions being included in those of these cities. These figures, consequently do not represent the normal deaths of the municipalities.



## DIVISION OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

C. W. EAST, M. D., *Acting Chief*

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The Division of Child Hygiene and Public Health Nursing is one of the divisions of the Department of Public Health whose development to a satisfactory extent has been rendered impossible during the past year on account of failure to obtain adequate appropriation or, rather, on account of the necessity of devoting the major appropriations to the fundamental divisions of a public health organization. It is recognized by all students of preventive medicine that infant welfare and the conservation of child life are absolutely essential to constructive public health work. Keeping the well child well is fully as important as rendering aid after the child has become sick, and the development of a generation of sturdy children is our best guaranty of a race of healthful men and women.

With a very limited personnel, the division, has succeeded in doing much toward creating interest throughout the State in the establishment of those agencies necessary to intelligent child welfare work, such as the employment of community nurses, medical school inspection, child welfare stations and dispensaries, clinics for crippled children and open air schools.

The division has worked in close cooperation with the governmental and extra-governmental agencies interested in child welfare such as the Woman's Council of National Defense, the Illinois Tuberculosis Association and with the Children's Bureau of the United States Department of Labor.

### PUBLIC HEALTH NURSING

Aside from its activities in child conservation, this division during the past year, for the first time in the history of health activities in Illinois, has given attention to public health nursing. It is now recognized that the public health or community nurse is essential to every well organized local or State health department and it is to be hoped that the corps of nurses of the Department of Public Health may be steadily increased with the succeeding years. The two nurses, already in the employ of the Department, have rendered good service in the encouragement of the employment of community nurses throughout the State, and have been especially valuable in epidemiological work and in assisting in other phases of the department's activities.

During the past year, the division has sent out 7,779 pieces of literature on child welfare and an exhibit has been loaned to twenty different communities. The Chief of the Division has given courses of lectures in the training schools for nurses in eight general hospitals in different parts of the State. He has also lectured before the county medical societies in seven counties and has read papers before State and National Medical Associations. Numerous lectures have been given to nursing associations, women's clubs, churches and high schools throughout the State.

The nurses connected with the division have assisted in local child welfare conferences, baby weeks and other child welfare activities and have spoken before mothers' clubs, women's clubs, and similar organizations.

#### STATE BETTER BABIES CONFERENCE

The growing movement for the conservation of child life, rather than for the cure of children actually sick, has found expression in so-called "better babies conferences" or "well baby conferences." These conferences differ from children's clinics or dispensaries in that they are designed for well babies and are centers to which parents may bring their children for medical examination and for advice and guidance. The effect of these conferences and the continuous conferences known as "baby welfare stations," in improving the general health and strength of children is now generally recognized and, for the purpose of encouraging such activities, the State Department of Public Health has conducted a conference in connection with the Illinois State Fair for a number of years past.

The conference held in connection with the fair of 1917 was more successful than any held prior to that time. Plans are now practically completed for the conference for 1918 and it is expected that between 500 and 600 will be registered for examination and rating.

#### POLIOMYELITIS CLINICS

Perhaps the most conspicuous work of the Division of Child Hygiene and Public Health Nursing has been the series of clinics conducted in different parts of the State for the after treatment of acute anterior poliomyelitis or infantile paralysis. These clinics have been held at Chicago Heights, Blue Island, Oak Park, Evanston, Joliet, Ottawa, Rock Island, Moline, Quincy, Galesburg, and Springfield. The clinic in Springfield has been held weekly with an average attendance of thirty patients while the other clinics, held bi-weekly, have had a total average of 175 patients. In this way, the Department of Public Health has ministered to an average of 117 crippled children each week, 80 per cent of whom are the victims of infantile paralysis and the remaining 20 per cent crippled by other diseases such as tuberculosis, rickets, cerebral palsy and accident. During the year, 201 crippled children

were treated by muscle training, 32 by casts, 52 by shoes, 86 by braces and 2 by surgery. Some received several of these factors of treatment. Ninety per cent of the patients registered have continued to the completion of their treatment.

To carry out this work has required an average travel of over 700 miles per week for the Chief of the Division and a nurse in addition to the travel necessary for public lectures and nurse instruction.

The importance and economy of this clinical work may be estimated when we consider the expense of institutional care for this large group of unfortunate children, had such care been available. All but seventeen of them remained at home, their treatment being carried out by local physicians and community nurses under the general supervision of the Division of Child Hygiene and Public Health Nursing. No figures or financial estimates, however, can do justice to the saving in comfort and in the promotion of well-being to these patients. Their efficiency in future life has been practically guaranteed to them, whereas, without this care, all of them would have suffered serious handicap and many of them would have been entirely helpless throughout life.

As a by-product of this service, an interest has been created among many classes of people in behalf of these crippled children. Physicians have given the work their endorsement and not a few have become proficient in the after care of victims of epidemic paralysis which is a disease factor of considerable importance at the present time. County and city authorities, clubs and individuals have contributed to the purchase of mechanical braces and supplies to such an extent that no child for whom a brace, a surgical operation or hospital care has been necessary has been obliged to do without it. About \$2,500.00 has been thus contributed by local initiative without solicitation on the part of the representatives of the division.

Several Illinois cities are now urging the establishment of clinics for crippled children, offering complete hospital and follow up facilities. Unfortunately, the personnel of the Division of Child Hygiene and Public Health Nursing is inadequate to meet the needs of the crippled children in the various sections of the State whose numbers are being augmented each year by new invasions of disease.

## DIVISION OF SURVEYS AND RURAL HYGIENE

PAUL L. SKOOG, *Supervisor of Surveys*

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The Division of Surveys and Rural Hygiene was created to meet needs which are relatively new in the field of public health work and yet which promise to be of ever-increasing importance. Within the past few years it has been recognized that constructive public health and social work must be based upon an intelligent appreciation of existing conditions and that, as a basis for community work, either general or specialized in character, there should be a thorough study of community conditions. This community study is commonly known as a "survey" and it may include every phase of social and civic activity or be confined to a single feature of community life. The sanitary survey is established as an essential part of all constructive public health activity and it is to such sanitary surveys that this division devotes much of its attention.

Rural sanitation, in years past, when the country was sparsely settled, when natural water supplies were unpolluted and sewage disposal could be left to chance with relative safety, was given relatively little consideration by public health organizations. It was the common belief, supported largely by fact, that country life is necessarily healthful life. Within the past few years, with increasing rural congestion, sanitary conditions in rural communities have been steadily growing worse until it is now contended by competent authorities, that large cities are more healthful places of residence than country districts, and that small towns are the most unhealthful of all places of human habitation. In addition to the making of sanitary surveys, the Division of Surveys and Rural Hygiene is charged with the supervision of rural sanitation and with the solution of the problems of country districts and small towns.

On account of wartime conditions and the mobilization of large numbers of troops in the several cantonments throughout Illinois, it has been found desirable for the Division of Surveys and Rural Hygiene to devote itself, during the year, almost exclusively to the making of surveys in the sanitary zones about these military camps and in the cities adjacent to them, making it necessary to forego the work in rural sanitation which otherwise would have been carried out.

The division was created as one necessary to the future development of the department but, on account of the requirements of the more fundamental of the divisions, the personnel was exceedingly limited so



that it has been necessary for the Chief of the Division to call upon other divisions for clerical or field assistants. In spite of this shortage in staff, the division has made a number of important surveys among which the following have received considerable public attention and commendation:

#### FREEPORT SURVEY

The survey of Freeport, Stephenson County, the first survey made by the division after the adoption of the Civil Administrative Code, was carried out in response to the request of a number of local organizations. The study occupied a period of about six weeks and covered every phase of the sanitary and health conditions of the community. A house-to-house canvass of the city brought out interesting information in regard to the population and afforded accurate knowledge of the existence of privies, shallow wells and accumulations of garbage, manure, and other wastes. The Division of Sanitation conducted an intensive study of water supplies, sewage and garbage disposal.

The survey included a study of vital statistics, covering a period of over five years, to permit reaching definite conclusions in regard to the morbidity and mortality from the more important preventable diseases.

The report of this survey, subsequently published in the monthly bulletin of the State Department of Health, presented clearly and impartially the sanitary and health conditions of the city of Freeport and offered helpful suggestions for their improvement and for the better organization of local health agencies.

#### ROCKFORD SURVEY

The close proximity of the city of Rockford, Winnebago County, to the large cantonment at Camp Grant, rendered it necessary that a careful study of the sanitary conditions in that vicinity be made, not only for the protection of the troops, but to safeguard the civil population which had been enormously increased through the establishment of the military camp. The plan of survey at Rockford was similar to that employed at Freeport, though on a much larger scale. The Division of Sanitation made studies of water supplies, sewerage and the disposal of wastes and the military authorities rendered some assistance in the territory immediately adjacent to the camp.

About 800 farms were visited by representatives of the Division of Surveys and Rural Hygiene and special instructions were given relative to the improvement in sanitary farm conditions. A large number of farmers were induced to construct sanitary privies and to take steps to protect their water supply. The report of the Rockford Survey was presented to the city officials and civic organizations of Rockford

and the findings and recommendations have been utilized to the definite advantage of the municipality.

#### CAMP HERRIN

A survey made in the vicinity of Camp Herrin, at East Peoria, Tazewell County, showed the sanitary conditions to be unsatisfactory with no provisions for sewage disposal. On the recommendation of the State Department of Public Health, an ordinance was passed requiring the installation of sanitary privies and other conditions were materially improved.

#### WAUKEGAN AND NORTH CHICAGO SURVEY

For some years past, the morbidity from typhoid fever has caused anxiety in the cities of Waukegan and North Chicago. During 1917, in North Chicago alone, with a population of about 5,000, there were more than 100 cases of this disease.

On account of their close proximity, the health conditions of these municipalities became a matter of grave concern to the authorities at the Great Lakes Training Station and at Fort Sheridan. On this account a sanitary survey of these communities was begun in March, 1918, with the cooperation of the authorities of the Great Lakes Training Station, the Waukegan Chamber of Commerce and the several city officials. This survey was somewhat more intensive than those previously referred to and the social conditions were studied as well as those more directly connected with health and sanitation.

As a new feature in this survey, the house-to-house canvass was utilized as a means of distributing educational material.

On account of the inadequacy of the health departments of both cities and the depleted municipal finances, which rendered material improvement impracticable, the Division recommended that these two cities take advantage of the recent law permitting the creation of sanitary health districts, whereby ample funds could be obtained for the establishment and operation of a modern health department covering the entire territory.

#### RANTOUL SURVEY

In cooperation with the military authorities at Chanute Field, near Rantoul, Champaign County, a sanitary survey was made in that locality. Special attention was devoted to the sanitary conditions surrounding the production of the milk supply and inspections of 60 farms were made on this account.

In many instances, unprotected privies were found on these dairy farms in close proximity to the sources of water supply and of the dairy houses, while in several other instances, milk was being marketed from premises on which there were cases of communicable disease.

The facts ascertained were transmitted to the military authorities at Chanute Field and also to the health officers of Champaign and Urbana, where part of the milk supply was sold.

In cooperation with the military authorities, every home in Rantoul was visited and special instructions were given relative to outside privies, manure piles and other fly-breeding places. The conditions at Rantoul were particularly unsatisfactory on account of lack of sewers. Reinspections, made at a later date, showed most gratifying results. During the survey of Rantoul, all restaurants and other food vending establishments were visited and all employees were vaccinated against smallpox and typhoid fever. All physicians in the county were given information in regard to the reporting of cases of tuberculosis and other communicable diseases. The house-to-house canvass was utilized for the distribution of public health literature.

#### TUBERCULOSIS SURVEYS

While the large number of tuberculosis surveys conducted in various parts of the State have been under the general supervision of the Division of Tuberculosis, the Division of Surveys and Rural Hygiene has assisted in many localities, particularly in the tabulation of results and the preparation of findings and conclusions.

In all of the surveys conducted by the Division, newspaper publicity and other means of education have been generally employed. For the most part the Division has found a ready response and thorough-going cooperation on the part of the communities in which surveys have been made and there is reason to assume that the recommendations resulting from these surveys have been quite generally acted upon.

## DIVISION OF DIAGNOSTIC LABORATORIES

GEO. F. SORGATZ, M. D.,<sup>1</sup> *Chief*

MARTIN DUPRAY, *Acting Chief*

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The Division of Diagnostic Laboratories, which succeeded the Diagnostic Laboratories of the State Board of Health, was decidedly crippled during the year by the fact that the Chief of the Division and one of his most capable assistants took leave of absence for an indefinite period of time to engage in military service. The demands of the Federal Government for technical men, and especially for those efficient in laboratory methods, has made it exceedingly difficult to keep up the personnel of this Division to a point equal to the heavy demands that are made upon it. In the face of this difficulty in keeping up the personnel of the staff, the work of the laboratories increased 70 per cent during the past year over the preceding year. A part of this increase has been due to the activity of the Division of Social Hygiene, working in conjunction with the Federal Government for the prevention and suppression of venereal diseases; but, in every phase of laboratory work, there has been a great increase which continues at the present time.

In spite of the shortage in laboratory workers and the increase in the demand for service, the laboratories have succeeded in meeting the requirements with reasonable efficiency for which the subordinate laboratory staff is entitled to special credit.

After several months without a Chief of the Division, the department succeeded in securing the services of a bacteriologist of wide experience who assumed the duties of Chief on May 1, 1918. Since that date, many changes have been made which have added to the efficiency of the division. New information cards, to accompany specimens to be transmitted to the laboratory, have been prepared in such form as to reduce the clerical work in the laboratory and to minimize the possibility of errors. Better types of containers, for the transmission of specimens, have been adopted, but, on account of the unsettled condition of the markets, containers of any type have been very difficult to obtain.

### LABORATORY WORK

During the past year, 10,499 specimens have been examined, as compared with 6,013 for the year previous. Of these, 3,133 were examinations of sputum for the diagnosis of tuberculosis, as compared with 2,690 similar specimens for the year preceding. There were 4,069 ex-

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<sup>1</sup> Absent on military service.



aminations of swabs for the detection of diphtheria, as compared with 1,937 for the previous year. Examinations of blood for the diagnosis of typhoid fever numbered 1,541, as compared with 1,182 for the year 1916-1917. Wassermann tests for syphilis were made to the number of 592, while similar tests for the previous year numbered 200. There were 1,184 tests and examinations of miscellaneous character made during the year.

Prior to January 1, 1918, Wassermann tests for syphilitic were made for indigent persons only and the number was relatively small. Beginning with the first of the year, however, these tests were made for all persons, regardless of financial condition, with the result that the numbers increased from 19 in January to 215 in June.

SUMMARY OF WORK DONE BY MAIN LABORATORY FOR FISCAL YEAR  
1917-1918

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total 1917- 1918.	Total 1916- 1917.
Tuberculosis.....	208	208	197	240	205	210	211	278	329	357	320	350	3,113	2,690
Diphtheria.....	67	58	105	941	1,244	395	163	205	200	357	246	88	4,069	1,937
Typhoid.....	115	224	179	116	103	57	192	107	100	111	83	154	1,541	1,182
Wassermann <sup>1</sup> .....	2	3	5	10	11	17	19	21	88	102	99	215	592	200
Miscellaneous.....	0	4	0	111	26	23	3	281	275	121	90	250	1,184	4
Total, 1917-1918.....	392	497	486	1,418	1,589	702	588	892	992	1,048	838	1,057	10,499	6,013

<sup>1</sup> For indigents only up to January 1, 1918.

#### LABORATORY DEVELOPMENT

Arrangements have already been made for important extensions of laboratory service during the coming year. So far as the personnel and facilities of the laboratory will permit, increased attention will be given to the examination of feces and urine for the detection of typhoid bacilli and other intestinal bacteria as a means of locating so-called "carriers" of disease. If the laboratory staff can be kept up to the strength made possible by existing appropriations, examinations will also be undertaken for the types of pneumococci and streptococci in the sputum. In preparation for this additional work, and more extensive work in the examination of spinal fluid for meningococci, special mailing cases and information blanks are being prepared.

The established value of antityphoid-paratyphoid vaccine in the prevention of typhoid fever and the importance of the use of this preventive agent in State institutions, have caused the Division of Diagnostic Laboratories to consider the advisability of the preparation of this vaccine for State use. With the present staff, supplemented by only a small amount of untrained labor, the division will be able to turn out in bulk form 30,000 treatments at a cost of approximately \$600.00, or about two cents for each treatment of three doses. This plan, if carried out, will result in a very large financial saving for the

State. With an increase in personnel, involving only moderate expenditures, it will be possible to increase the production of antityphoid vaccine so as to produce a quantity adequate for general free distribution.

Plans are also being made for the production of such quantities of antimeningitis vaccine as may be necessary for the emergency needs of the State and of the Department of Public Health. This can be carried out by the present laboratory force.

While it will be impossible to prepare supplies for general distribution, it is expected that the Division will be able to produce emergency supplies of toxin-antitoxin mixture for active immunization against diphtheria.

#### DISTRIBUTION OF CONTAINERS

It has been the custom of the Department of Public Health, for several years past, to supply containers or mailing cases for the transmission of specimens to the laboratory, through the large number of agencies established in all parts of the State for this purpose and for the distribution of curative and preventive vaccines and sera. While this plan is one which is convenient for physicians in all parts of the State, its proper operation is fraught with many difficulties since the service of the agencies is given without compensation and since the demand for laboratory service varies decidedly in different localities, leading to shortage of supplies in some communities with an unwarranted accumulation in others. A plan has been worked out for a better and more uniform system of distributing containers and for the checking up at frequent intervals of the supplies in the hands of agents, whereby it is believed that the distributing service will prove very much more satisfactory.

#### BRANCH LABORATORIES

On account of the fact that some laboratory specimens are exceedingly perishable and, consequently, cannot be shipped for long distances and because it is essential that very prompt reports be made to physicians on other specimens, the State Department of Public Health has established branch laboratories in several sections of the State. Such laboratories are now in operation at Mt. Vernon, Urbana, Chicago, and Rockford. The laboratory formerly maintained at Galesburg has been discontinued on account of the fact that the bacteriologist in charge has enlisted in military service and it has been found impossible to fill his place. It is believed that, with better distribution of containers, the branch laboratories may be expected to do much more extensive work in the future than in the past.

#### DISTRIBUTION OF VACCINES

Illinois, with the exception of Massachusetts, was the first state in the union to distribute diphtheria antitoxin in convenient containers without charge, for the use of rich and poor alike. The Department of

Public Health has gradually extended its policy of supplying curative and preventive sera, vaccines and other agents until at the present time it furnishes diphtheria antitoxin, smallpox vaccine, antityphoid vaccine, nitrate of silver solution for the prevention of ophthalmia neonatorum and the Schick Test for determining immunity to diphtheria. As intimated in foregoing paragraphs, it is the purpose of the department to go even more extensively into the preparation of such preventive and curative agencies as rapidly as their worth is absolutely determined and appropriations and laboratory facilities and personnel will permit.

Aside from the saving of human life and the prevention of disease resulting from the free distribution of these agents, the saving in dollars and cents already demonstrated, is very striking. During the past year, the department has distributed through its agencies in all parts of the State, 44,578 packages of antitoxin and 19,672 packages of antityphoid vaccine. The cost of these supplies, if purchased by those to whom they were administered, would amount to approximately \$280,000. The cost to the State was less than \$50,000, showing a financial saving to the people of the State of \$230,000.

#### PROPOSED DEVELOPMENT

On account of the importance of biologic products such as vaccines, antitoxins and sera, in the prevention and cure of certain communicable diseases, and the large quantities of such supplies used and distributed by the Department of Public Health, it would be a matter of economy if the manufacture of such agents could be developed in the department's own laboratories. The possibility of such extended activity at a minimum of expense has already been dwelt upon in these pages.

It is hoped that it may be possible, during the coming year, to divide the functions of the present diagnostic laboratories, one division continuing purely diagnostic work which is steadily increasing in volume and the other section devoting itself to the production of biologic products.

## DIVISION OF HOTEL AND LODGING HOUSE INSPECTION

W. W. McCULLOCH, *Superintendent*

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The Division of Hotel and Lodging House Inspection, as it is termed under the present organization of the State Department of Public Health, was created by an amendment to the State Board of Health Act for the purpose of securing supervision of cubic feet of air space and other sanitary features of lodging houses, boarding houses, taverns, inns and hotels in cities of 100,000 population or over. The activities of the division are consequently confined to the city of Chicago where offices are maintained.

During the fiscal year, 604 lodging houses were measured and inspected and 215 remeasured and reinspected. These lodging houses contained 18,376 rooms and housed 12,943 lodgers. They were prepared to accomodate 24,473 lodgers although their legal capacity was 43,105.

Supplemental inspections covered 15,081 lodging houses containing 47,419 rooms with 31,050 lodgers. The present capacity of these lodging houses was 63,935.

During the year, 1,123 lodging houses were found to be vacant, 225 went out of business and 56 were torn down.

During January and February, 1918, the inspectors for the division served 5,495 notices upon proprietors and managers of lodging houses, calling upon them to file the sworn statement required by law to be filed by March 1, of each year. These lodging houses represented a population of 91,783 persons. In April, May and June, second or final notices were served upon 2,122 proprietors, lodging 22,615 guests, who had failed to file the required statement with the county clerk. Up to June 30, 1918, there had been 4,766 sworn statements filed with the county clerk and copies of 4,364 of these had been made for the use of the department.

The inspectors for the division have reported 372 violations of public health laws relating to lodging houses, such as over-crowding, defective and leaky plumbing, accumulations of rubbish in basements, hallways and unoccupied rooms, and filthy walls, ceilings, beds and bedding. Written notices were immediately served upon the proprietors or managers of lodging houses in which these conditions were found to exist, directing that the objectionable conditions be immediately abated. On reinspection, it was found that, in practically every instance, the sanitary conditions had been materially improved.



During the months of May and June, the inspectors distributed in all lodging houses and hotels, pamphlets and circulars issued by the State Department of Public Health dealing with sanitary matters and disease prevention.

## DIVISION OF PUBLIC HEALTH INSTRUCTION

EARL B. SEARCY, *Editor*<sup>1</sup>

HENRY B. HEMENWAY, M. D., *Acting Chief*

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The greatest obstacle confronting public health organizations in their efforts to prevent disease and promote health is the indifference in regard to these matters not only on the part of the lay public, but, frequently, on the part of local authorities and physicians. This very rarely assumes the form of real opposition to health activities, but is rather an apathy based upon lack of knowledge of the modern tenets of preventive medicine. On this account public health instruction must become one of the most important functions of any health organization. The striking accomplishments of this form of health work are thoroughly appreciated by the more experienced health officers who recognize that the striking reduction in the morbidity and mortality of communicable diseases throughout the past generation has been due, not so much to laws or mandates, or even to scientific epidemiological work, as to the steady extension and spread of knowledge among the people at large.

The object of the Division of Public Health Instruction is to bring to the public the truth about health and about disease prevention in terms that are simple and in a form which is so interesting that it will be accepted and acted upon by busy men and women. To this end the division utilizes circulars, pamphlets, a monthly health journal, press service in the newspapers, public lectures, motion pictures, portable educational exhibits and a collection of educational mechanical devices.

### PUBLICATIONS

In years past, the State Board of Health published a monthly bulletin made up almost altogether of technical material designed primarily for the medical profession. Two or three years ago, the style and character of this publication were radically changed and it appeared as a popular monthly health journal, liberally illustrated and designed for the non-professional reader. It is in this form that "Illinois Health News" now reaches upward of 13,000 readers each month.

One of the most striking features of "Health News" is a series of health cartoons, two of which appear in each monthly issue, emphasizing the necessity and importance of various public health measures or depicting, as only a cartoon can, the serious results of their non-observance. The popularity of these cartoons is indicated by the fact that,

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<sup>1</sup> Absent on military service.

with the consent of the department, they are regularly reproduced in some forty publications in this country and abroad. During the past year, the circulation of these cartoons has been greatly increased by the preparation of a series of electrotypes which have been furnished without cost to the daily and weekly newspapers of the State.

Because of their effectiveness and their appeal to the general public, colored enlargements have been made of many of these cartoons as a part of the portable exhibits loaned by the department for use in all parts of the State.

During the past year, the Division of Public Health Instruction has been somewhat hampered in the publication of "Health News" on account of the fact that the departmental editor is among those of the staff who have been called to military service.

One of the larger undertakings of the Division of Public Health Instruction is the complete revision of the rules and regulations for the control of the various communicable diseases and the special educational circulars devoted to these diseases and to other important public health subjects. An entirely new circular of information on the cause and prevention of venereal diseases and pamphlets containing the rules and regulations for the control of venereal diseases and of tuberculosis have been issued during the year together with new publications on malaria, influenza and the suppression and destruction of the house fly.

On account of the interest which has been created in tuberculosis as a wartime problem and the heavy demand for educational material in the thirty-three counties voting on the county tuberculosis sanitarium proposition at the autumn election, the popular circular of the department on tuberculosis is entirely exhausted and a new education is now in process of preparation. The circular on the care of the baby, which recently appeared in large editions, is similarly out of print on account of the increasing interest in child welfare stimulated as a wartime activity by the Federal Children's Bureau and other agencies interested in child conservation. As the various communicable disease circulars are becoming exhausted, they are being replaced by new publications materially improved in form and style.

#### PRESS SERVICE

The Division of Public Health Instruction operates a press service sending out articles of popular character to about 750 daily and weekly newspapers in Illinois. This regular, periodical service is supplemented by special articles in times of epidemic or other unusual public health emergencies. The press service also reaches the medical profession through the medical journals having wide circulation in the State.

#### LECTURES

The Chiefs of the several Divisions of the Department of Public Health are usually available for public lectures on their individual

special lines of activity and this service has been very much in demand by clubs, societies, colleges and high schools. In addition to these popular lectures, representatives of the department have appeared before various medical and scientific bodies for the purpose of presenting papers or of giving clinical instruction.

The Chief of the Division of Public Health Instruction appeared before a number of chautauqua gatherings in the southern part of the State giving addresses on "Malaria—an Economic Problem," and at a similar series in the northern part of the State, talking on "Wartime Health Problems."

As a part of the campaign conducted in conjunction with the Federal authorities for the prevention and suppression of venereal diseases, lectures have been prepared by the Chief of the Division of Social Hygiene and will be delivered to the men selected by the draft for military service in each of the 102 counties of the State.

The division has prepared a number of popular lectures on various phases of disease prevention and health promotion which are sent to women's clubs, schools and other organizations, accompanied by illustrations in the form of stereopticon slides.

#### EXHIBITS

During the past few years, the Department of Public Health has developed a portable exhibit, made up largely of mechanical models, which has been shown at State and county fairs and in connection with large gatherings of people. This exhibit is accompanied by an experienced attendant whose duty it is to install and operate the exhibit and at the same time to distribute public health educational literature to those who attend.

Small parcel post exhibits, made up of posters and large cartoons and other educational matter which may be readily transported, are sent without charge whenever requested.

The department also maintains a loan collection of motion picture films and stereopticon slides for use in motion picture houses and other places of public gathering.

During the fiscal year stereopticons have been loaned to six communities; the larger mechanical exhibit has been shown at seven places for periods of from three to ten days; motion picture films have been sent to twenty-two towns and cities and illustrated lectures have been furnished to fifteen clubs and organizations. Parcel post exhibits of colored cartoons and posters have been sent out in 274 instances.



## DIVISION OF SOCIAL HYGIENE

G. G. TAYLOR, M. D., *Chief*

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The Division of Social Hygiene was created after the organization of the other divisions of the Department of Public Health to meet the urgent need of special activity for the suppression and prevention of venereal diseases especially in the military service and among the young men who would be inducted into service through the selective draft. This required intensive work in the sanitary zones about the military cantonments, but also demanded educational and regulative activities in every community in the State from which soldiers for the new National Army are to be drawn.

Venereal diseases have been more or less unsuccessfully and unsystematically dealt with for centuries, the lack of success being largely due to the fact that the wide prevalence of these diseases has not been realized until the European nations became involved in the present world-war. In military experience, however, it has recently been learned that approximately 20 per cent of the soldiers in all European armies became more or less incapacitated by reason of the ravages of venereal diseases. When the United States entered the war, it was found that the percentage of men infected in this country equalled, and in some cases exceeded, that of Europe.

A national campaign against the spread of venereal diseases was launched by the Federal Government and Illinois was the second State in the Union to join in hearty cooperation with the Federal agencies. As an initial step, the State Department of Public Health, in November, 1917, promulgated rules and regulations for the prevention and control of syphilis, gonorrhea and chancroid and placed these rules in immediate effect. Stated briefly, these rules require that all cases of venereal diseases be reported to the local health authorities and to the State Department of Health: that patients suffering from venereal diseases be isolated and quarantined, when necessary to protect the public: that diseased prostitutes be given hospital treatment: that indigent cases be treated at the expense of the county in which the individuals reside at the time the disease is discovered.

### ENFORCEMENT OF RULES

The reports required by these rules are treated confidentially, the name of the patient being withheld provided the physician in attendance guarantees that the public shall be protected from infection. Sources

of infection given in the reports are investigated and, if disease is found, treatment is provided.

Illinois has no statute providing for compulsory examination, but the offer of treatment of the disease is usually sufficient inducement to cause the suspect to submit to examination.

In the case of prostitutes, residing in property used for immoral purposes, the placarding of the premises usually brings about prompt examination.

Specimens, including smears for microscopical examination and blood for the Wassermann test for syphilis are submitted to the Division of Diagnostic Laboratories of the Department of Public Health. Persons found to be diseased and in an infectious stage, are required to submit to treatment. If the person is not a prostitute and is able to employ a physician, he or she may be treated privately.

Prostitutes, of course, are the most prolific source of venereal infection and no reputable physician can guarantee that these women will refrain from exposing others to infection. Consequently, it becomes necessary that all such persons shall be treated in hospitals where they are under constant control and supervision. This hospital treatment is provided at the expense of the county, as is the case with the indigent sick. Inasmuch as practically all prostitutes become indigent and dependent when restrained from pursuing their calling, this arrangement is a fair and proper one.

The rules provide that the patient must continue treatment until cured of his infectiousness under penalty of having his name reported to the health officer. This is the case whether the individual is a private individual under the care of his own physician or of known immoral character and under public treatment. The patient is protected from extortion on the part of the unscrupulous physician by right of appeal to local or State Departments of Health at any time.

Cases under treatment which cannot be properly isolated or controlled, are subject to quarantine, as is the case in any other infectious disease and the premises may be placarded as in other communicable diseases. Certificates of freedom from venereal disease, which were formerly furnished to prostitutes by even some physicians who were otherwise known to be ethical and reputable, and which are known to be not only valueless, but actually a source of added danger on account of the false sense of safety they created, are now prohibited.

Persons suffering from venereal diseases in an infectious stage are prohibited from removing from one health jurisdiction to another without the permission of the health officer of the jurisdiction from which and to which the person desires to remove.

The rules provide for the examination of inmates of jails, penal, correctional and charitable institutions of the State, county and city, for venereal diseases.

Penalties are provided for failure on the part of physicians, druggists or other persons for failure to report cases or for giving false information.

Circulars of information on the subject of venereal diseases, prepared and furnished by the State Department of Public Health, are given to every patient.

#### SERVICE IN MILITARY ZONES

On account of the necessity for protecting soldiers from venereal infection, the rules and regulations of the department were first enforced in the districts created about the military camps and cantonments within the State. In this, the activities of the department were necessarily limited on account of the lack of funds. This work was largely in the hands of a Medical Supervisor of Military Zones, who had been employed to meet war time conditions, acting under the direction of the Director of the department.

Approximately one thousand prostitutes have been examined and about 75 per cent of these have been found to be infected with venereal diseases. Of the diseased, approximately 60 per cent have been found to be infected with both gonorrhea and syphilis. Practically all cases of gonorrhea are infectious; but only about 40 per cent of the cases of syphilis were found to be in an infectious stage.

#### CREATION OF THE DIVISION

On account of the growing importance of this work and the increased accent placed upon it by the Federal Government, a new division of the State Department of Public Health—known as the Division of Social Hygiene—was created in July, 1918, and the former Medical Supervisor of Military Zones was made Chief of the division.

#### FEDERAL COOPERATION

On account of the fact that the need for such a division had not been anticipated and, consequently, no appropriation had been made for it, the rapidly increasing activities were constantly impeded by lack of funds. This situation was relieved late in 1918 by funds provided by the Federal Government, by which the Division of Social Hygiene is now financed.

The Sixty-fifth Congress appropriated one million dollars for venereal disease control in the States, and after a study of work being done in other States, plans of the Social Hygiene Division of the Illinois Department were perfected, submitted to and approved by the Interdepartmental Committee having the matter in charge, and the sum of \$61,307.51 was allotted to Illinois and became available for use November 1, 1918.

Fifty per cent of this money will be expended for the purpose of purchasing drugs for free distribution to diseased persons, and assisting in the establishment and operation of dispensaries for free treatment

of venereal disease patients. There is great need for these dispensaries on account of the disinclination of the average physician to give proper attention to this class of diseases, and to the consequent neglect of them.

Uncured gonorrhea in the young man results in the infection of his wife when he marries. Later she develops a condition of chronic invalidism, necessitating a surgical operation which ages and unsexes her. If she bears a child, it may acquire ophthalmia neonatorum, and unless properly cared for is blinded.

Twenty per cent of the allotment will be expended for educational purposes, including the distribution of the proper literature, lectures and moving picture exhibitions. As a part of this program of education, the Chief of the Division of Social Hygiene has prepared a series of lectures on venereal diseases, their prevention and the immediate and remote dangers arising from them, and arrangements have been made for the presentation of these lectures to the "Class A" men of the selective draft in various sections of the State.

Twenty per cent will be expended for repressive measures, including the prosecution of violators, investigations and social service work, leaving 10 per cent for administration expense. In order to obtain an allotment for the coming year, an appropriation of at least an equal amount by the State Legislature is necessary, this being a condition specified in the Kahn-Chamberlain Bill under which the Government appropriation was made.

An examination of a large number of syphilitics proves that in 30 per cent of the cases there is spinal cord involvement. A large percentage of the inmates of the State asylums for the insane are in their present condition as a result of syphilis. Hereditary syphilis causes a large percentage of imbecile and feeble-minded children. Practically all the blindness of infants is due to gonorrhea. Proper medical treatment in the early stages of venereal disease will prevent these conditions. Proper medical treatment renders syphilis non-infectious. The number of cases of syphilis having open lesions has been materially reduced, due to the fact that proper and early treatment rapidly renders such cases non-infectious. Therefore, syphilis can be eliminated as a disease factor.

The continuation of the grant of federal funds for venereal disease work is conditioned upon the appropriation of a like sum by the State itself. With an appropriation by the State to equal the Government allotment to Illinois, the activities in venereal disease control can be more than doubled. Up to the present time, aside from the salary and expense of one employee for a few months, the State of Illinois has expended no money for the control of venereal diseases, while the State of Michigan has expended over one hundred thousand dollars for one year's work.



## DIVISION PLANS

The plans of the Division include encouragement of better facilities for the treatment of venereal diseases by assisting free clinics already in operation; the establishment of such clinics, where they are needed, and supplying drugs for the treatment of patients unable to pay for them; educational work instructing the public in the danger and destructiveness of venereal diseases and the prevalence, and the necessity for prompt and thorough medical attention; repressive measures including a system of social service, whereby efforts will be made to prevent prostitutes who have been cured from returning to their former practices.

## GENERAL CONCLUSIONS

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During the first year of operation under the Civil Administrative Code, the State Department of Public Health and its present form of organization have been put to severe test especially through the heavy demands imposed upon the organization by the exigencies of war. With all of the difficulties in meeting the unusual demands of wartime and of maintaining even a reasonably complete staff of technical workers, it may be said that the results of the first year confirm the belief that a public health department, unimpeded by extraneous functions, is a great improvement over the former health organization and that the present divisional organization has added much to the efficiency of the department.

It is to be hoped that all of the divisions may be completely organized for effective work and that the corps of district health officers, now operating so efficiently, may be materially increased with coming sessions of the General Assembly so that there will not be a community in the State whose conditions will not be familiar to the department and which will not feel the influence of those agencies which the State has provided in the interest of the people.

### LOCAL COOPERATION

Even if this condition can be realized, disease prevention and health conservation cannot be adequately carried out without still another important feature in health organization. Regardless of how efficient a state health department may be, it is largely dependent upon the local health departments for practical and lasting results of its endeavors. With the State Department of Public Health well organized and a reasonably efficient staff of district health officers, the acute need in Illinois at the present time is provision for thoroughly qualified local health officials.

### SANITARY HEALTH DISTRICT ACT

This end is made possible by the Sanitary Health District Act which was passed by the General Assembly in 1917. Under this law, any town or two or more adjacent towns in counties under township organization, or any road district or road districts in counties not under township organization, may be organized as a public health district, even though such district may be created from parts of two or more counties. The creation of the public health district is determined by referendum and the project is supported by a special tax of not to exceed four mills on the dollar of taxable property embraced in the area covered.

The law requires the appointment of a full-time district health officer, to be selected by competitive examination conducted by the State Department of Public Health, who shall receive not less than \$1,500.00 per annum. The law also provides for the employment of nurses, chemists, clerks and assistants as deemed necessary by the district health officer and for the equipment and operation of offices and laboratories.

The advantages of this law are obvious. Under its provisions, no community will be unable to provide efficient public health administration on account of small population since any number of townships or road districts may unite to constitute a health district. By the general adoption of the provisions of this law, there would not be any section of the State without adequate public health service. It is in this law that the State Department of Public Health sees the possibility of general development whereby the State Government and the local community may coordinate their energies, with the State district health officers constituting the necessary connecting links.

#### STATE AND COUNTY COOPERATION

A distinct step forward in the efficiency of public health administration in Illinois is anticipated in the State and County Collaborating Health Service<sup>1</sup> which is now in process of organization. In the working out of this plan, each county medical society is asked to designate one of its members who will become the representative of that county in this collaborating service. In the absence of the district health officer, and in the existence of an emergency, this county representative will be called upon to act for the State, receiving therefor reasonable compensation on a per diem basis.

The representatives of all counties will be brought together from time to time at central points for conference on public health subjects and particularly to consider the more recent advances in preventive medicine of more or less technical character, with the understanding that they shall return to their home communities and shall present the results of these conferences at meetings of their county medical societies.

It is believed that, through this plan, the State Department of Public Health will have a very close and intimate contact with the physicians in all parts of the State and that the more modern health problems, which the practicing physician has been in the habit of relegating to the health official, will acquire a new interest and that all medical men will come to look upon themselves as more definitely responsible for the public welfare than they have in the past.

<sup>1</sup> Since these pages have been written, this State and County Collaborating Health Service has been organized, its first important function being that of meeting community needs in connection with the influenza epidemic.

## THE DEPARTMENT OF PUBLIC HEALTH

## STANDARD ACCOUNTS

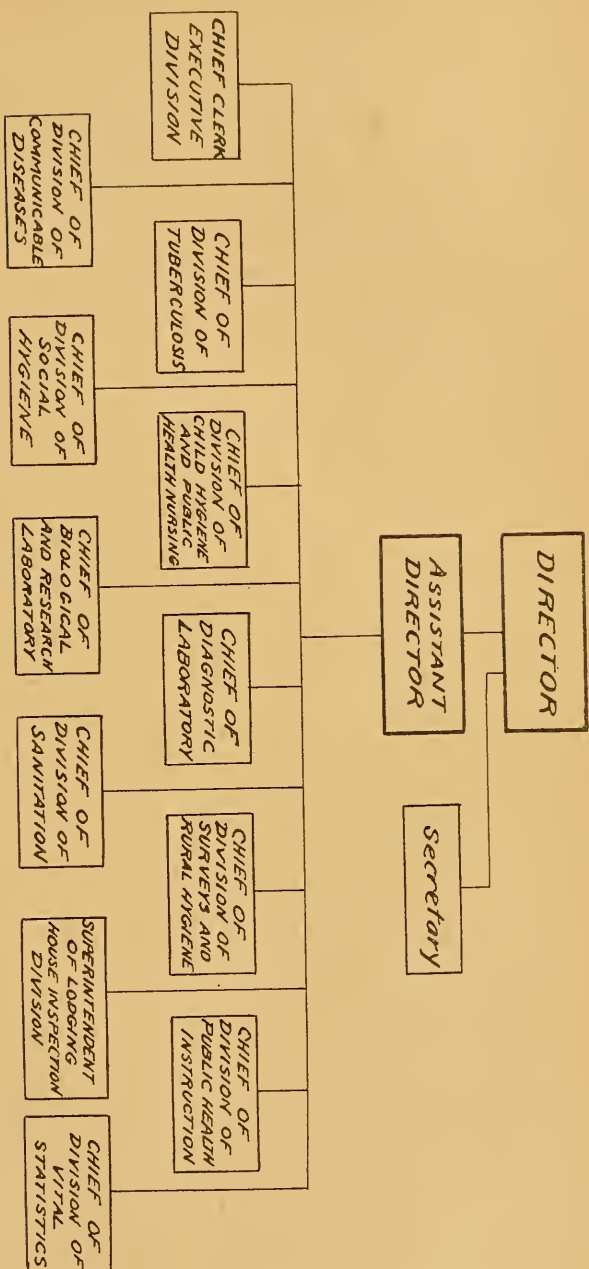
Divisions.	Salaries and wages.		Office expense.		Traveling expense.		Operating expense.		Industrial working capital.		School supplies.		Repairs.		Division totals.	
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
General Office.....	10.46	.....	30.60	.....	74.29	\$4,160	32.00	\$ 56	.....	.....	.....	.....	56.21	.....	.....	.....
* do.....	9.13	\$ 659	30.37	\$757	74.29	.....	32.00	.....	.....	.....	.....	.....	56.21	\$163	31.98	\$6,095
Communicable Disease.....	8.36	.....	2.58	.....	27.03	.....	10.83	.....	.....	.....	.....	.....	76.25	.....	.....	.....
* do.....	18.05	14,696	57	.....	27.03	4,514	22.65	19,751	.....	.....	.....	.....	4.00	61	111.15	19,815
Diagnostic Laboratory.....	27.53	.....	26.00	.....	95.10	.....	60.32	.....	.....	.....	.....	.....	4.00	2	.....	.....
* do.....	22.31	1,111	26.00	143	95.10	951	60.32	4,539	.....	.....	.....	.....	100.00	15	47.76	6,746
Tuberculosis.....	.....	.....	59.80	.....	6.30	126	100.00	.....	.....	.....	.....	.....	100.00	.....	.....	.....
* do.....	.....	.....	59.80	305	6.30	.....	100.00	20	.....	.....	.....	.....	100.00	.....	.....	.....
Sanitation.....	25.25	.....	21.99	.....	57.58	.....	14.88	.....	.....	.....	.....	.....	98.33	59	8.71	466
* do.....	23.25	4,216	21.99	332	57.58	5,355	14.88	140	.....	.....	.....	.....	98.33	59	35.71	9,922
Vital Statistics.....	7.90	.....	24.47	.....	136.30	.....	33.75	.....	.....	.....	.....	.....	100.00	.....	6.77	.....
* do.....	15.06	1648	24.47	645	136.30	1681	33.75	27	.....	.....	.....	.....	100.00	55	13.85	1602
Lodging House Sup. and In- spection.....	23.22	.....	22.92	.....	93.67	.....	93.60	.....	.....	.....	.....	.....	100.00	.....	.....	.....
* do.....	23.22	2,020	22.92	344	93.67	281	93.60	493	.....	.....	.....	.....	100.00	200	29.84	3,343
Standard account totals.....	14.41	.....	23.62	.....	41.54	.....	18.99	.....	.....	.....	.....	.....	74.00	.....	21.82	.....
* do.....	3.59	\$2,962	23.57	\$2,533	41.54	\$14,706	18.02	194,551	.....	.....	.....	.....	74.00	\$555	8.92	\$16,155

## SUMMARIES OF ALL DIVISIONS

	Appropriations.	Disbursements.	Unexpended balance.	Per cent unexpended.
Department totals.....	\$181,158 00	\$141,632 00	\$39,526 00	21.82
Department totals including contingent disbursements.....	.....	165,013 00	16,145 00	8.92

The percentages shown are on basis of entire appropriation. (No reserve out.)





ORGANIZATION

ILLINOIS DEPARTMENT OF PUBLIC HEALTH

Division Chiefs

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# SECOND ANNUAL REPORT

OF

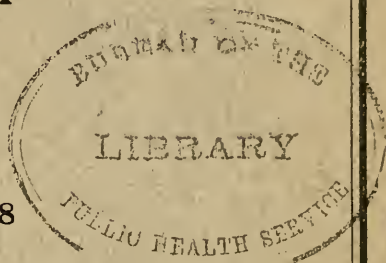
# The Department of Public Health

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July 1, 1918

TO

June 30, 1919



C. ST. CLAIR DRAKE, M. D., Director

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With Compliments of

C. ST. CLAIR DRAKE,

Director of Public Health.



SECOND ANNUAL REPORT

OF

The Department of Public  
Health

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July 1, 1918

TO

June 30, 1919



C. ST. CLAIR DRAKE, M. D., Director

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SPRINGFIELD, ILL.

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1920

34937—500



STATE OF ILLINOIS  
**THE DEPARTMENT OF PUBLIC HEALTH**

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C. ST. CLAIR DRAKE, M. D., *Director*

GEORGE T. PALMER, M. D., *Assistant Director*

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DIVISION OF COMMUNICABLE DISEASES

JOHN J. McSHANE, M. D., DR. P. H., *Chief*

DIVISION OF TUBERCULOSIS

GEORGE T. PALMER, M. D., *Acting Chief*

DIVISION OF SANITATION

PAUL HANSEN, *Chief Sanitary Engineer*

DIVISION OF VITAL STATISTICS

SHELDON L. HOWARD, *Registrar of Vital Statistics*

DIVISION OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

C. W. EAST, M. D., *Acting Chief*

DIVISION OF SURVEYS AND RURAL HYGIENE

PAUL L. SKOOG, *Supervisor of Surveys*

DIVISION OF DIAGNOSTIC LABORATORIES

MARTIN DUPRAY, *Chief Bacteriologist*

DIVISION OF HOTEL AND LODGING HOUSE INSPECTION

W. W. McCULLOUGH, *Superintendent*

DIVISION OF PUBLIC HEALTH INSTRUCTION

SAMUEL W. KESSINGER, *Acting Chief*

DIVISION OF SOCIAL HYGIENE

G. G. TAYLOR, M. D., *Chief*



## THE DEPARTMENT OF PUBLIC HEALTH

C. ST. CLAIR DRAKE, M. D., *Director.*

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During the fiscal year July 1, 1918 to June 30, 1919, the activities of the State Department of Public Health have been directed upon the following important lines:

(a) The completion of the organization of the department under the provisions of the Civil Administrative Code, which had been delayed by war-time conditions.

(b) The completion of the war-time program including supervision of sanitary zones around military cantonments, special surveys and unusual activities in dealing with the war-time tuberculosis and venereal disease problems in conjunction with the Federal Government, the American Red Cross and other extra-governmental agencies.

(c) The readjustment after war-time conditions and the resumption of normal peace-time activities.

(d) Meeting and combatting the influenza-pneumonia epidemic of the fall and winter of 1918-19, recognized as the most serious epidemic the State and Nation had ever experienced.

(e) The development of new health activities whose value had been demonstrated by the war and by the influenza-pneumonia epidemic.

### I. COMPLETION OF DEPARTMENTAL ORGANIZATION

With the adoption of the Civil Administrative Code, on July 1, 1917, the Department of Public Health was organized with eleven divisions, devoted to the various phases of public health activity and each division under the supervision of a competent and experienced chief. The appropriations made by the Fiftieth General Assembly were not sufficient for the development of all of these divisions upon a permanent working basis, but it was found possible to develop the more important or fundamental divisions to a point where all ordinary conditions could be met and to create at least a skeleton organization of the other divisions.

Aside from the insufficiency of appropriations, serving to limit the complete development of the department, difficulty was also encountered in securing an adequate personnel, particularly in the more technical scientific lines on account of the heavy demands that were made for such service by the Federal Government in connection with war-time activities. In addition to this insurmountable difficulty in securing new heads for the more recently appointed divisions, two of the division chiefs, the Chief of the Division of Sanitation and the Chief of the Division of

Diagnostic Laboratories, together with a considerable number of older employees, were enlisted in the army, leaving many important activities in the hands of new, and, at times, relatively inexperienced persons.

The Fifty-first General Assembly made appropriations through which it was possible to increase the personnel of all divisions on a practical working basis and the signing of the Armistice and the disbanding of the national army not only brought back the older employees of the department, but made it less difficult to obtain new employees of broad, specialized experience.

The Department of Public Health as organized at the time these pages are written, for the fiscal year beginning July 1, 1919, is as follows:

1. *Executive Division*, consisting of the Director, the Assistant Director, the Chief Clerk and clerical staff.

2. *Division of Communicable Diseases*, consisting of a chief of the division, Supervisor of Field Service, an Assistant Epidemiologist, eight full-time district health officers and clerical staff.

3. *Division of Tuberculosis*, with the Assistant Director of the department serving as acting chief, with one field nurse and clerical staff.

4. *Division of Sanitation*, with a chief of the division, assistant engineers, laboratory technicians, a farm sanitation adviser and clerical staff.

5. *Division of Vital Statistics*, with the chief or registrar and assistant chief of the division, statisticians, field inspectors, and clerical force.

6. *Division of Child Hygiene and Public Health Nursing*, with a chief of the division, a supervisor of nursing service, a medical assistant, field nurses and clerical staff.

7. *Division of Diagnostic Laboratories*, with a chief of the division, bacteriologist, laboratory helpers and general staff.

8. *Division of Biological and Research Laboratories*, with provision for a chief of the division and laboratory staff. The duties of this division are being performed by the Division of Diagnostic Laboratories, pending more complete organization.

9. *Division of Surveys and Rural Sanitation*, with a chief of the division, field workers and clerical staff.

10. *Division of Public Health Instruction*, with a chief of the division, librarian and clerical staff.

11. *Division of Social Hygiene*, with a chief of the division, and a staff of field workers, lecturers and clinicians.

12. *Division of Lodging House Inspection*, with superintendent, field staff and clerical force.

Within the department, the divisional organization is quite similar to the departmental organization of the State Government under the



provisions of the Civil Administrative Code, the division chiefs being assigned to special activities, but being in constant conference and working at all times in closest cooperation.

## II. COMPLETION OF WAR-TIME PROGRAM

At the beginning of the fiscal year, the Department of Public Health was engaged in numerous activities incidental to war-time conditions. These consisted principally of the control and supervision of the sanitary zones surrounding the several large military camps located within the State; the surveys of these zones and of towns and cities whose normal conditions were radically changed by their close proximity to military cantonments; service in connection with returned tuberculous soldiers for physical examination and provision for their medical care and treatment; close supervision of territory surrounding military camps for the detection and suppression of communicable diseases; special work in conjunction with the United States Public Health Service in the diagnosis, treatment, control and suppression of venereal diseases.

All of these projects, demanding, from time to time, the services of practically all of the divisions of the department, were continued until the signing of the Armistice in November at which time it became possible to discontinue most of these war activities. The work among returned tuberculous soldiers, however, and the cooperative work with the United States Public Health Service, in the control of venereal diseases, have not been discontinued, but on the contrary, have been generally expanded and will continue to demand the attention of the department for a number of years to come.

## III. RESUMPTION OF PEACE-TIME ACTIVITIES

During the war, the protection of the military population was the public health problem of paramount importance and, on this account, many of the ordinary activities of the department, which were not pressing in character, were given secondary place. On account of the government restrictions limiting building and construction during the period of the war to those things which were imperatively needed, a large number of municipalities which had contemplated the installation of water works, sewer systems, sewage and garbage disposal plants, and other sanitary installations, were compelled to abandon their projects until peace was declared.

With the signing of the Armistice, the construction of sanitary public utilities has been resumed and the Division of Sanitation, within the past few months, has been engaged in exceptionally large numbers of public enterprises, investigating the sources of new public water supplies, outlining plans for sewage and waste disposal and advising communities on the rehabilitation of plants which had ceased to function effectively. The Division of Surveys has been called upon to make sanitary studies of a number of Illinois cities whose civic conditions

had been radically altered by the development of large industries and by greatly increased population due to war-time activities.

In addition to these demands for sanitary service, it must be recognized that the entire subject of public health administration has been subjected to considerable change on account of the unusual opportunity for observation made possible in dealing with large numbers of men under control during the war; by the wide experience which a large number of physicians have had in sanitary work in military service; by the new activities which governmental agencies have assumed particularly in the control of venereal diseases and tuberculosis which were given great impetus by the seriousness of these diseases during the war and, particularly, by the lessons that were impressed upon health authorities as to the needs for better developed local health departments in the tragic epidemic of influenza and pneumonia during the fall and winter of 1918 and 1919.

In the entire reorganization of health administration in Illinois, made possible by the Civil Administrative Code, the State is indeed fortunate that at the time of departmental reconstruction it has had available the great mass of new public health experience of the past few years. This epoch-making experience renders it possible for the department to be established on thoroughly modern lines and in harmony with the teachings of "the new public health."

#### IV. DEVELOPMENT OF NEW ACTIVITIES

The revelations of the exemption boards and of military and medical officers as to the previously unrecognized prevalence of venereal diseases and tuberculosis, caused special emphasis to be placed on these diseases by both Federal and State authorities during the war, and the knowledge attained makes it incumbent upon efficient State health organizations to continue venereal disease and tuberculosis work in the future as they have never been carried out in the past.

During the war, the Department of Public Health promulgated rules and regulations for the control of venereal diseases and tuberculosis, imposing upon local health authorities a definite responsibility and the Division of Social Hygiene and the Division of Tuberculosis will be charged with coordinating local activities and with the enforcement of these necessary rules and regulations during the years to come. The Division of Tuberculosis in many of its educational activities has worked and will continue to work in close cooperation with the Illinois Tuberculosis Association. For the uses of the Division of Social Hygiene, the Fifty-first General Assembly appropriated the sum of \$50,000 annually and a like amount was received from the Federal Government under the provisions of the Chamberlain-Kahn bill.

One of the fundamental necessities in a successful attack upon either venereal diseases or tuberculosis is the establishment of means

for early and accurate diagnosis and for this reason, the Division of Tuberculosis and the Division of Social Hygiene have devoted themselves very largely to the establishment of local clinics or dispensaries designed for both diagnosis and treatment. After the experience of the war, it will never again be possible for a State department of public health to maintain the attitude of relative indifference to these diseases which was once customary among such departments.

During the war a large number of Illinois physicians, who had previously been relatively unconcerned in regard to public health administration, were assigned to the sanitary divisions of military service, while all of the medical men engaged in the war, regardless of their branch of service, had impressed upon them the tremendous importance of preventive medicine and modern sanitation. In addition to this, hundreds of thousands of young men, who have returned from the war to assume the business, industrial and professional responsibilities of the State, were given general instruction during their military service which will cause them in the future to observe health and sanitary regulations as nothing else could have done.

It will be an important function of the Department of Public Health, during the coming years, to utilize the sanitary and public health experience of these physicians and private citizens in establishing a closer spirit of cooperation between the department and the various communities of the State. To a large extent, this is already being developed through the cooperating health officers designated for service by the various county medical societies.

Out of the war there came a new appreciation of the value of child life and the urgent necessity for the development of the health of children. This need was very acutely felt in Germany, Great Britain, France, Belgium and other nations whose young men were sacrificed in large numbers during the war. In these countries it became imperative that there should be developed as many healthy children as possible to replace those who were lost and to take part in the national reconstruction of the future. While the lesson was not impressed upon the United States as deeply as it would have been if the war had been continued, nevertheless the importance of child conservation has come before us in an entirely new light and new significance.

In the creation of the new national army, the exemption boards of the selective draft rejected hundreds of thousands of young men on account of physical unfitness, illness or disability, much of which might have been prevented had more intelligent attention been given to the infants and children of the past generation. The observance of Children's Year, under the auspices of the Children's Bureau of the Federal Department of Labor, in cooperation with the Councils of Defense of the several states, served to accent the need for more attention to child life and, as a consequence of the war-time stimulation of



interest, child welfare will occupy more attention in the future on the part of health officials than it ever has in the past. For this reason the State Department of Public Health is expanding its program and increasing the personnel of the Division of Child Hygiene and Public Health Nursing with the idea of improving the child population of the State, which, if neglected, will continue to produce an adult population, a large percentage of which is physically unfit.

The influenza epidemic of the autumn of 1918 and the winter of 1918-1919, demonstrated with tragic force the inefficiency of a great many of the local health departments throughout the State. In spite of the tremendous importance of disease prevention and health promotion, the majority of Illinois communities, even of considerable size, have continued to look upon their health departments merely as emergency organizations and such departments have not been financed or manned as they should be. Not infrequently the local health officer is a layman who has had little or no public health experience, while with equal frequency, the lives and health of the people have been entrusted to physicians, meagerly compensated, who devote relatively little time to their official duties.

The influenza epidemic made the heaviest possible demands upon the local health authorities of the State and at the same time requisitioned every available physician for private practice. This is usually the case—that private practice is the heaviest at the time that public health requirements are the greatest—but the situation was rendered extremely acute in the recent epidemic and with the result that the part-time medical health officers, engrossed as they were in their private affairs, in many instances practically abandoned their public health activities.

The cost of the influenza epidemic to the State of Illinois in human lives, in human suffering and in financial loss was staggering in its proportions, and yet this loss will not have been in vain if it has impressed upon local authorities and upon the people as a whole, that ordinary prudence requires that every community shall be provided with a full-time medical health officer and with a medical organization capable of successfully meeting public health emergencies as they arise. Out of its experience during the past fiscal year, the State Department of Public Health sees the necessity of insisting upon adequate local health organization and of building up both the State and local health departments to a place where prompt and efficient response can be expected in any epidemic or other public catastrophe.

#### V. COOPERATION WITH EXTRA-GOVERNMENTAL AGENCIES

During the war, there were brought into being large numbers of extra-governmental agencies devoting themselves to the pressing war-time needs of the military and civil population. Hundreds of thousands of persons, who had previously been oblivious to social and civic responsibilities, acquired a new interest and a new enthusiasm which they were



reluctant to give up with the resumption of peace. The American Red Cross, with its tremendous membership and its gigantic organization, was indisposed to resume the relatively narrow field of an emergency organization which it had occupied prior to the war and other national organizations which had increased in magnitude during the war-time period of aroused public enthusiasm, turned their thoughts to peace-time conditions in mapping out their programs for the future. Very naturally, all of these organizations came first to the consideration of public health as the subject which would appeal most definitely to the largest portion of the population and which had taken on a new significance during the past few years.

Even before the war, there had been considerable complaint that so many volunteer or extra-governmental agencies were engaging in the various phases of public health work that there was serious overlapping and conflict not in harmony with modern policies of efficiency and economy.

There consequently came, after the signing of the Armistice, a Nation-wide sentiment that there should be some method of coordinating all of these extra-governmental agencies and of affiliating them more closely with the official or governmental health agencies.

As a result of numerous conferences, in which the Director and Assistant Director of the department have participated, there is reason to expect that during the next few years coordination in health work will be realized to an extent which in the past seemed hardly possible.

The conference of State and Provincial Health Authorities, which had formerly been merely a conference with annual meetings and with very little definite existence between such meetings, has been made a permanent organization with its affairs governed by an executive committee of which the Director of the department has been selected as executive secretary. The advantage of this permanent organization is, that it makes possible constant contact of the State health authorities of the Nation in the carrying out of cooperative plans with the nationally organized extra-governmental organizations and there are now in process of preparation working agreements with the American Red Cross, the National Tuberculosis Association, the American Public Health Association, and the American Medical Association which will unquestionably lead to more uniform and more definite health activities in the future.

Under the program now considered by the American Red Cross, that organization, without interfering with the local activities of extra-governmental agencies already in existence, will work in close touch with the State Health Department in securing the standardization and supervision of all nurses engaged in public health work throughout Illinois, this program being subscribed to by the National and State Tuberculosis Associations.

Through an agreement now under consideration between the National organization of State health authorities and the National Tuberculosis Association, there will be a mutual understanding between

the State health officials and State tuberculosis associations as to the programs to be carried out, thereby avoiding overlapping and duplication of effort, materially aiding the State health department in reaching large numbers of persons in all parts of the State and greatly strengthening the tuberculosis associations.

Through coordinating effort now under contemplation between the American Public Health Association, the National organization of State health authorities and the American Medical Association, it is quite likely that there may be obtained, within the Federal Government, a coordination of the various public health activities now controlled by a large number of Federal departments, bureaus and commissions creating for all practical purposes, a Federal health organization, charged with all of the phases of public health activity in which the National Government engages and as is now to be found in most of the more progressive State governments.

The coordination between the United States Public Health Service and the State health departments, illustrated in the epidemiological work of the past and in the campaign against venereal diseases, is too well known to require further discussion and will probably be extended in the future.

In Illinois, the spirit of cooperation between governmental and extra-governmental agencies has long been recognized as more than satisfactory. The Illinois Tuberculosis Association and other large extra-governmental agencies have recognized the advantage of utilizing the State health department as the coordinating agency through which there may be obtained a better and more efficient alignment of all health work, while the State Department of Public Health has recognized the tremendous advantage accruing to the governmental agency through the thorough-going cooperation of the large and influential extra-governmental organizations. In the activities which centered about Health Promotion Week observed during May, 1919, the general desire for closer cooperation between extra-governmental and governmental agencies in Illinois was made greatly manifest, giving promise of a unified interest on the part of all classes of people in health promotion in Illinois which will bear rich fruits in years to come.

## EXECUTIVE DIVISION

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The Executive Division of the State Department of Public Health, including the offices of the Director and the Assistant Director, serves as the central office of the department and is engaged in the accounting, the arrangement of office methods, the keeping of general records and the coordination of the activities of all of the divisions. The Executive Division receives all mail and maintains general departmental correspondence files. The Executive Division also maintains a reference library, handles general supplies and serves as a means of communication of all divisions with other State departments and extra-governmental agencies.

During the fiscal year ending June 30, 1919, the Executive Division has been engaged in the reorganization of the department on a departmental basis, in the development of new activities, in the selection of technical workers through civil service to man the newly organized divisions, and in many conferences with Federal departments and extra-governmental organizations incidental to the preparation of a general health program and its adaptation to peace-time conditions.

At the beginning of the fiscal year, the Director of the department was in constant touch with the War Department, the United States Public Health Service and other Federal departments, in the supervision of sanitary zones surrounding military camps and cantonments, in the control of venereal diseases in the civil population surrounding such camps, and in other activities connected with the military establishment housed within the State.

With the termination of the war, a large number of organizations which had been engaged in social and relief work among soldiers, manifested an intention of engaging in public health work, and as a matter of economy and efficiency and to avoid overlapping and duplication of effort it became desirable to coordinate all of these extra-governmental organizations and to affiliate them with the governmental health agencies.

As a first step in this direction, the National organization of State and Provincial Health Authorities was placed on a permanent basis with an executive committee which was directed to keep in constant touch with health activities throughout the Nation. The Director of the Department of Public Health was made secretary of the organization and secretary of the executive committee, and in this capacity he has been constantly engaged in outlining general health programs and in



conferences with other state health authorities, with officials of the Federal Government and with officers of national health organizations such as the American Red Cross, the National Tuberculosis Association, the American Medical Association and the United States Public Health Service.

As a result of these conferences, tentative agreements have been reached whereby there will be practical coordination of governmental and extra-governmental agencies in the future, with the State health departments of the several states serving as the central or coordinating organizations.

With the termination of the war and the resumption of activities in civil life, the Executive Division has been called upon to generally reorganize the several divisions of the department to meet peace-time needs of the period of reconstruction. Our experiences during the war, with our new appreciation of the importance of venereal diseases, child welfare, tuberculosis and other health activities, which have not been highly developed in the past, have led to new standards in public health administration, and these have had to be taken into consideration in the reorganization of divisions now practically completed.

The development of some of these newer activities and the expansion of other divisions to more adequately meet the demands upon them, has been made possible by larger appropriations granted by the Fifty-first General Assembly, so that at the present time it may be definitely stated that the Department of Public Health is in better position to meet all of the varied requirements of modern public health administration than ever before in the history of the State.

In the Division of Communicable Diseases, an Assistant Epidemiologist and two additional full-time district health officers have been added. The Division of Child Hygiene and Public Health Nursing has been strengthened by the employment of a supervisor of nursing service and a medical assistant. The Division of Surveys and Rural Hygiene has secured appropriations placing it on a relatively independent basis, while all of the other divisions have been sufficiently strengthened to guarantee more effective work than they have been able to render in the past.

In an effort to extend the influence of the department into all communities of the State, there has been developed a State and County Collaborating Health Service, for which each county medical society has been asked to nominate one of its members to serve as the representative of the department in his community. In the absence of the district health officer and in the existence of an emergency, this county representative acts for the State, receiving therefor reasonable compensation on a per diem basis. The department endeavors to supply this representative with information in regard to all recent advances in sanitary science and preventive medicine and it is part of his duty to transmit

this information to the members of the county medical society in an effort to stimulate an interest on the part of the medical profession in the prevention of disease and the promotion of health.

The termination of a second year under the Civil Administrative Code has proven unmistakably the wisdom of that epoch-making piece of legislation. The Department of Public Health has been freed from its duties as an examining and licensing body, and has been relieved of the responsibility of the enforcement of the Medical Practice Act and other laws controlling the practice of professions and trades, so that it has been enabled to devote all of its time and attention to the prevention of disease and to the conservation and promotion of health of the people of Illinois. The provisions of the Code have permitted an organization infinitely superior to that which prevailed in the past, while the constant contact with the directors of the other departments of the State Government has lead to cooperation on the part of these departments and their many divisions which has been helpful in many ways. In the absence of a Board of Health and with the centralizing of power and authority in a director there has been made possible a cooperative relationship with extra-governmental agencies which would have been difficult under the old form of organization.

At many of the national conferences and meetings attended by representatives of the Department of Public Health during the past two years, the Illinois Department of Public Health, operating under the provisions of the Civil Administrative Code, has been pointed out repeatedly by representatives of other states as being in an enviable position for the accomplishment of efficient public health work on an economical basis.

During the fiscal year, Illinois was visited by the most serious, widespread and devastating epidemic the State has ever known—the pandemic of influenza—which appeared in Eastern military camps late in the summer and was noted at the Great Lakes Naval Training Station a few weeks later, and during September, October and November spread throughout Illinois with great rapidity, with tremendous morbidity and with high death rate, afflicting perhaps two and one-half million people. Before the epidemic had assumed large proportions, the Director, accompanied by the Assistant Director and a clerical staff, opened offices in the city of Chicago where they remained for a period of approximately two months. This action was rendered necessary, first, that the department might be in close touch with that section of the State first invaded by the disease, that it might work in close cooperation with the United States Public Health Service and the American Red Cross in supplying medical and nursing assistance to stricken communities, and that the Director might be able to attend the conferences of the Illinois Influenza Commission, created at the suggestion of the Council of National Defense, to attempt to solve the gigantic problem of controlling and mas-



tering the disease. The details of this epidemic are further dealt with in the report of the Division of Communicable Diseases, but the epidemic will stand out for many years as a tragic chapter in the history of the State, indicating to what extent epidemic disease may entirely paralyze civil and industrial life and indicating also the urgent need for better health organization in all of the local communities of the State. The entire price of the influenza epidemic is not yet paid. Hundreds of cases of physical wreckage, as the results of influenza and pneumonia, are being brought to light every month and it will perhaps never be possible to learn the total loss in human lives and health of this public catastrophe.

An innovation along educational lines which stands out conspicuously in the history of the fiscal year was Health Promotion Week, designated by the Fifty-first General Assembly to be observed in the month of May during the years 1919-1920. Health Promotion Week, which is dealt with more fully in the report of the Division of Public Health Instruction, was a remarkable example of cooperative activities of governmental and extra-governmental agencies, a striking demonstration of the great increase of interest in matters of public health developed throughout the State within the past few years, an event which served to drive home to hundreds of thousands of persons their first appreciation of the value of individual health as a community asset.

The activities of the various divisions, in all of which the Executive Division has participated, are described in the following divisional reports which are prepared by the division chiefs with the collaboration of the Executive Division.

## DIVISION OF COMMUNICABLE DISEASES

JOHN J. MCSHANE, M. D., Dr. P. H. *Chief*

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In common with other divisions of the State Department of Public Health, the Division of Communicable Diseases encountered difficulties early in the fiscal year on account of the fact that its personnel was more or less disrupted through the enlistment of members of the staff in military service; through the inability of the division to fill its vacancies with men experienced in public health work and, particularly, because a large number of local health officials were engaged in the war together with the hundreds of local physicians of the State. It is stated that Illinois gave more medical men to national war service proportionately than any other state, leaving many communities entirely without physicians and dependent upon the medical men who resided many miles away.

In view of the shortage of personnel in the division and the absence of these large numbers of health officers and local physicians, Illinois is exceedingly fortunate in the showing it is able to make as to the communicable diseases of the past year. With the exception of the epidemic of influenza, during the autumn of 1918 and winter of 1918-1919, the State has been singularly free from serious incidence of contagious and infectious diseases.

Even under normal conditions, with the physicians of the State engaged in their professional work in their accustomed places, serious epidemics have frequently developed on account of the fact that mild cases of contagious disease have not been brought to the attention of medical men. With thousands of physicians absent from their homes and with many communities relying entirely upon overworked doctors living from ten to twenty miles away, it is surprising that more serious epidemics did not result.

The records of the Division of Communicable Diseases for the fiscal year show that there have been 353,299 cases reported between July 1, 1918, and June 30, 1919, as compared with 61,665 cases during the previous fiscal years. Of these reports, it will be borne in mind that 204,142 were cases of influenza, occurring during the epidemic. The remaining cases, numbering 149,157, are misleading unless regarded with a full knowledge of the public health developments of the past year. Reviewing the figures of the year, it appears that, in addition to over 200,000 cases of influenza, the number of cases of communicable diseases exceeded those of the past year by 87,492 and yet it is shown that there was an actual decrease in the numbers of cases of typhoid

fever, malaria, smallpox, scarlet fever, diphtheria, meningitis, and poliomyelitis. In fact, of the ordinary communicable diseases, measles is the only one in which there were more cases reported during the fiscal year ending June 30, 1919, than during the previous year.

The great increase in the number of reported cases is due to new conditions in public health activity and, to a certain extent, is the outgrowth of war-time conditions. Prior to the war, health officials paid relatively little attention to reports of venereal diseases and tuberculosis, while in many localities pneumonia was not regarded as reportable at all. During the past year, almost 23,000 cases of pneumonia were reported with over 16,000 cases of tuberculosis and large numbers of cases of venereal diseases.

The total numbers of reported cases of communicable diseases distributed among the 102 counties of the State and showing the reports from the principal cities within these counties are to be found in the accompanying table, (Table I); while additional tables show the reports of cases of the seventeen principal diseases, by months for the State as a whole, and for the city of Chicago for the fiscal year just passed and for the fiscal year ending June 30, 1919, (Tables II, III, IV and V).

#### INFLUENZA

The epidemic of influenza of the autumn of 1918 and the winter of 1918-1919 stands out as the most devastating, widespread and spectacular invasion of communicable disease the State has even seen. While over 200,000 cases were reported, it may be safely assumed that this represents only a part of the total incidence of the disease. The total number of deaths from influenza and complicating pneumonia amounted to 32,324 as compared with 103,138, the total number of deaths throughout the State due to all other causes.

Cases of influenza were reported early in September, 1918, at the Great Lakes Naval Training Station, situated on the shores of Lake Michigan about thirty-five miles north of Chicago and close to the cities of North Chicago and Waukegan. At the time of the first invasion of the disease, there were approximately 5,000 young men housed in the Training Station.

About ten days later, a number of cases of influenza were reported in the extreme southern part of the State, at Elco in Alexander County. Elco is a village of 236 inhabitants and investigation proved that the disease was brought to this isolated community by a returned soldier from Camp Forest near Oglethorpe, Georgia. The history of the outbreak at Elco is interesting. On September 17, this soldier suffering from a "cold" and complaining of "not feeling well" returned from the military camp. He visited the village of Elco, spending much of his time in the post-office and in the stores of the village. On September 20, he visited his fiancée at Cache, Illinois, but returned to Cairo the same day.

TABLE I—SHOWING THE PREVALENCE OF FIFTEEN PRINCIPAL COMMUNICABLE DISEASES BY COUNTIES AND PRINCIPAL MUNICIPALITIES FOR THE FISCAL YEAR JULY 1, 1918, TO JUNE 30, 1919

County.	Diphtheria.	Gonorrhea.	Influenza.	Malaria.	Measles.	Epidemic Meningitis.	Poliomyelitis.	Pneumonia.	Scarlet fever.	Smallpox.	Syphilis.	Tuberculosis of lungs.	Whooping Cough.	Typhoid Fever.	Chancreoid.
Adams.....	12	79	933	.....	.....	.....	.....	7	3	4	1	.....	26	1	.....
Quincy.....	27	.....	1,647	.....	8	.....	.....	40	63	14	14	9	111	14	2
Alexander.....	2	.....	534	.....	.....	.....	.....	.....	1	3	.....	2	11	.....	.....
Cairo.....	.....	.....	261	.....	.....	.....	.....	.....	.....	.....	2	1	.....	.....	.....
Bond.....	.....	4	418	.....	1	.....	.....	15	.....	3	.....	3	130	2	.....
Boone.....	.....	.....	466	.....	13	.....	.....	.....	4	.....	.....	3	36	.....	.....
Brown.....	8	.....	973	.....	1	.....	.....	2	54	18	2	.....	7	.....	.....
Bureau.....	.....	1	973	.....	1	.....	.....	8	13	4	1	.....	110	1	.....
Calhoun.....	7	.....	2,931	.....	3	.....	.....	3	13	.....	.....	.....	15	.....	.....
Calhoun.....	3	.....	763	.....	17	.....	.....	.....	18	.....	.....	3	69	.....	.....
Carroll.....	.....	8	679	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cass.....	8	.....	474	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Champaign.....	16	4	1,445	.....	8	.....	.....	5	2	12	1	.....	60	2	.....
Champaign.....	21	36	1,333	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Croana.....	47	6	536	.....	.....	.....	.....	7	1	33	9	.....	.....	.....	.....
Christian.....	1	2	1,768	2	29	1	.....	9	18	24	1	7	50	2	.....
Clark.....	1	1	559	.....	.....	.....	.....	3	18	1	.....	.....	130	1	.....
Clay.....	2	2	954	.....	4	.....	.....	.....	4	1	.....	.....	12	.....	.....
Clinton.....	.....	.....	687	.....	3	.....	.....	.....	.....	.....	.....	.....	41	.....	.....
Coles.....	29	1	1,290	.....	5	.....	.....	14	18	7	.....	.....	6	9	.....
Maltoon.....	15	1	314	.....	27	.....	.....	14	7	.....	.....	.....	.....	.....	.....
Cook.....	400	1	15,413	.....	181	8	9	105	104	40	1	133	758	4	.....
Chicago.....	6,162	4,758	43,371	.....	13,259	113	71	21,424	2,174	111	2,637	14,904	2,695	277	372
Chicago.....	39	.....	1,020	.....	1	.....	.....	1	18	2	.....	.....	.....	.....	.....
Evansston.....	27	2	170	.....	26	.....	.....	4	21	.....	.....	13	.....	.....	.....
Oak Park.....	.....	.....	1,427	.....	.....	.....	.....	.....	.....	.....	.....	1	15	.....	.....
Crawford.....	2	.....	198	.....	.....	.....	.....	6	.....	2	.....	.....	.....	.....	.....
Cumberland.....	.....	5	.....	.....	.....	.....	.....	14	10	.....	.....	.....	20	.....	.....
DeKalb.....	13	2	553	.....	1	.....	.....	7	40	6	.....	.....	.....	.....	.....
DeKalb.....	22	4	683	.....	2	.....	18	26	.....	.....	3	.....	.....	.....	.....
DeWitt.....	5	.....	63	.....	4	.....	.....	10	3	12	.....	77	21	.....	.....
Douglas.....	3	.....	1,350	.....	1	.....	.....	1	.....	2	.....	.....	61	.....	.....
DuPage.....	10	.....	988	.....	1	.....	.....	3	.....	.....	.....	.....	43	21	.....
Edgar.....	47	.....	844	.....	8	.....	2	3	10	10	2	.....	.....	.....	.....
Edwards.....	.....	.....	949	.....	7	.....	.....	3	3	.....	.....	.....	.....	.....	.....
Elmhurst.....	2	1	1,120	.....	.....	.....	.....	.....	19	2	.....	4	11	.....	.....
Fayette.....	1	.....	1,374	.....	4	.....	.....	1	10	18	.....	2	11	1	.....
Ford.....	3	.....	618	1	1	.....	3	.....	15	.....	.....	.....	.....	.....	.....
Franklin.....	.....	3	2,284	.....	.....	1	.....	82	2	1	.....	.....	116	11	.....



TABLE I—Continued.

County.	Diphtheria.	Gonorrhea.	Influenza.	Malaria.	Measles.	Epidemic Meningitis.	Poliomyelitis.	Pneumonia.	Scarlet Fever.	Smallpox.	Syphilis.	Tuberculosis of Lungs.	Whooping Cough.	Typhoid Fever.	Chancreoid.
Fulton.....	9	7	2,022	.....	4	.....	.....	1	2	73	2	10	36	1	.....
Gallatin.....	.....	4	506	.....	.....	.....	.....	5	1	.....	.....	2	1	.....	.....
Greene.....	17	.....	758	.....	.....	.....	.....	.....	4	11	.....	2	3	.....	.....
Grundy.....	.....	.....	1,415	.....	.....	1	1	61	6	.....	.....	2	1	.....	.....
Hamilton.....	3	.....	1,475	.....	.....	.....	.....	.....	.....	.....	.....	3	33	.....	.....
Hancock.....	3	10	1,286	.....	1	.....	1	7	5	1	5	1	5	.....	.....
Hardin.....	.....	.....	263	.....	.....	.....	.....	.....	.....	.....	.....	.....	23	7	.....
Henderson.....	3	11	234	.....	4	.....	.....	.....	.....	.....	.....	1	29	.....	.....
Henry.....	.....	.....	666	.....	23	.....	.....	5	1	1	1	1	78	1	.....
Kewanee.....	.....	8	1,545	.....	.....	.....	.....	67	2	.....	1	3	4	.....	.....
Iroquois.....	11	.....	1,164	2	25	3	3	8	6	2	.....	2	12	.....	.....
Jackson.....	2	1	1,344	.....	1	.....	.....	33	7	11	.....	4	12	.....	.....
Jasper.....	1	.....	806	.....	.....	.....	.....	.....	1	29	.....	2	14	.....	.....
Jefferson.....	5	1	1,142	.....	1	.....	.....	10	2	.....	1	2	45	.....	.....
Jersey.....	.....	9	774	.....	1	2	7	2	49	2	1	4	9	4	.....
JoDavies.....	.....	.....	1,110	.....	.....	.....	.....	.....	.....	.....	.....	2	25	.....	.....
Johnson.....	1	77	1,110	.....	.....	.....	.....	63	14	45	14	1	45	3	.....
Kane.....	83	24	1,649	.....	6	1	9	.....	.....	.....	.....	5	38	2	.....
Kankakee.....	11	7	2,672	.....	1	2	2	.....	6	58	2	4	.....	.....	.....
Kendall.....	22	.....	1,449	.....	1	.....	20	5	21	88	.....	1	15	14	.....
Knox.....	4	2	553	.....	16	.....	1	4	.....	.....	.....	2	3	30	1
Galesburg.....	.....	30	1,132	.....	160	.....	.....	.....	11	76	31	9	.....	.....	.....
Lake.....	32	26	3,145	.....	20	2	3	12	21	1	9	1	115	36	.....
LaSalle.....	25	.....	2,091	.....	9	1	2	16	75	21	.....	8	41	6	.....
LaSalle.....	8	16	1,801	.....	.....	.....	.....	.....	9	4	.....	7	.....	.....	.....
Lawrence.....	19	.....	1,689	.....	2	.....	.....	.....	4	3	.....	1	.....	.....	.....
Lee.....	2	.....	137	.....	.....	.....	.....	.....	2	3	.....	2	20	1	.....
Livingston.....	6	.....	441	.....	1	.....	.....	1	40	34	2	1	6	.....	.....
Logan.....	25	3	3,454	.....	3	1	.....	22	1	8	2	15	8	3	.....
Macon.....	.....	.....	1,015	.....	.....	.....	1	2	21	7	.....	1	55	.....	.....
Macomb.....	43	93	1,729	.....	.....	.....	.....	29	7	.....	.....	.....	.....	.....	.....
Madison.....	17	26	905	.....	1	.....	.....	.....	8	5	12	20	56	5	.....
Alton.....	23	3	4,954	1	4	3	3	59	27	53	16	9	29	.....	.....
Marion.....	2	5	2,993	.....	.....	.....	2	14	10	48	14	6	63	7	.....
Marshall.....	.....	.....	7,112	.....	6	.....	.....	.....	15	15	14	12	31	13	.....
Mason.....	4	2	1,915	.....	16	.....	.....	29	1	57	.....	367	108	7	.....
Mason.....	.....	5	1,920	.....	12	.....	.....	14	1	61	2	38	7	4	.....
Mason.....	.....	2	1,546	.....	6	.....	.....	5	7	24	.....	1	.....	.....	.....



Massac.....	28	434	17	6	2	1	4	1	1	4	3	1	1
McDonough.....	7	1,917	1	3	2	1	19	1	1	1	23	1	1
McHenry.....	3	1,569	67	40	2	3	40	1	1	1	45	1	1
McLean.....	3	2,447	4	4	10	30	30	13	4	4	45	1	1
Bloomington.....	1	985	1	1	13	30	30	13	19	19	13	1	1
Menard.....	1	1,303	7	1	7	9	29	8	12	16	8	4	4
Mercer.....	1	639	1	1	3	3	29	2	2	22	4	11	11
Monroe.....	3	416	1	1	2	2	89	6	6	36	2	4	4
Montgomery.....	3	1,893	12	3	5	5	89	1	1	36	2	4	4
Morgan.....	8	1,390	1	1	2	17	50	9	9	6	6	67	67
Jacksonville.....	15	1,559	1	1	6	6	50	9	9	15	15	67	67
Mouthrie.....	14	303	4	1	1	22	22	1	1	33	33	1	1
Ogle.....	14	1,008	9	1	7	48	5	1	1	7	7	1	1
Peoria.....	109	2,232	14	8	37	37	39	132	32	112	112	3	3
Perry.....	1	1,426	2	1	1	12	3	8	2	2	2	8	8
Piatt.....	3	1,750	1	1	3	3	188	132	32	112	112	3	3
Pike.....	11	1,261	1	1	12	12	3	8	2	2	2	8	8
Pope.....	1	380	1	1	3	3	160	1	1	13	13	1	1
Pulaski.....	1	132	1	1	2	2	16	1	1	12	12	1	1
Punam.....	1	1,921	101	5	34	9	25	2	2	16	16	1	1
Randolph.....	9	490	1	1	2	2	22	2	2	37	37	87	87
Richland.....	45	130	6	1	23	12	15	15	21	103	103	234	234
Rock Island.....	4	109	8	1	4	114	44	1	1	91	91	3	3
Rock Island.....	4	109	8	1	4	114	44	1	1	91	91	3	3
Saline.....	8	5,113	2	1	11	17	3	61	182	45	45	20	20
Sangamon.....	5	1,715	11	1	8	8	32	2	2	16	16	45	45
Springfield.....	88	3,802	4	1	31	31	32	61	182	45	45	20	20
Scott.....	1	353	1	1	1	1	1	1	1	2	2	4	4
Schuyler.....	1	74	1	1	1	1	1	1	1	1	1	4	4
Shelby.....	1	1,040	1	1	2	3	2	2	2	17	17	6	6
Stark.....	1	216	3	1	7	7	3	2	2	8	8	1	1
Stephenson.....	9	436	37	1	2	2	3	3	3	119	119	1	1
Freepont.....	9	15	955	1	23	13	5	11	5	1	1	7	7
St. Clair.....	9	12	1,545	1	23	13	5	11	5	1	1	7	7
Belleville.....	31	71	2,030	1	2	2	5	16	5	1	1	7	7
East St. Louis.....	27	635	4	1	19	19	20	112	7	17	17	2	2
Tazewell.....	4	13	2,480	1	10	8	36	1	9	17	17	2	2
Union.....	61	12	494	8	17	8	200	6	8	39	39	1	1
Vermilion.....	19	213	1	1	3	3	66	6	6	136	136	14	14
Danville.....	57	3	2,690	2	1	7	64	2	4	7	7	22	22
Wabash.....	1	385	2	1	2	2	11	1	3	23	23	21	21
Warren.....	13	1,808	1	1	1	21	7	1	1	1	1	4	4
Washington.....	2	1,219	2	1	1	3	26	1	1	16	16	4	4
Wayne.....	1	1,769	1	1	1	7	6	1	1	25	25	2	2
White.....	1	769	1	1	2	6	67	3	3	101	101	11	11
Whiteside.....	11	2,274	13	1	7	6	5	5	5	16	16	32	32
Will.....	36	1,098	6	5	12	12	5	5	5	16	16	32	32
Solid.....	28	189	2	1	7	7	8	1	1	1	1	1	1

TABLE I—Concluded.

County.	Diphtheria.	Gonorrhea.	Influenza.	Malaria.	Measles.	Epidemic Meningitis.	Pollomyelitis.	Pneumonia.	Scarlet Fever.	Smallpox.	Syphilis.	Tuberculosis of lungs.	Whooping Cough.	Typhoid Fever.	Chancroid.
Williamson.....	5	1	844	.....	.....	.....	.....	1	.....	7	3	.....	35	7	.....
Winnabago.....	27	.....	983	.....	42	2	.....	29	34	.....	.....	13	57	2	1
Rockford.....	64	133	1,233	.....	443	3	3	7	89	38	19	1	.....	3	3
Woodford.....	.....	1	1,735	.....	3	.....	.....	18	4	7	1	.....	47	.....	.....
Total.....	8,060	7,040	222,491	7	33,804	105	256	22,718	3,634	2,503	3,256	16,195	7,140	1,229	438

TABLE II—SHOWING REPORTS OF FIFTEEN PRINCIPAL COMMUNICABLE DISEASES FOR THE ENTIRE STATE OF ILLINOIS BY MONTHS FOR THE FISCAL YEAR JULY 1, 1917, TO JUNE 30, 1918

Diseases.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Diphtheria....	890	722	1,212	814	2,046	1,161	1,028	649	751	665	565	566	11,069
Influenza.....	162	102	121	11	89	1,510	1						1,996
Malaria.....	1,331	312	189	122	389	417	1,150	939	1,237	1,278	1,501	641	9,506
Meningitis, epidemic cerebrospinal....	61	36	37	36	29	23	48	58	69	62	53	19	531
Poliomyelitis, acute infectious.....	18	87	324	266	72	14	10	4	17	21	18	16	867
Scarlet fever...	699	351	528	401	232	648	758	611	561	505	362	148	5,804
Pneumonia.....				48	395	427	602	560	1,242	1,409	612	163	5,458
Smallpox.....	312	114	146	168	93	292	742	744	645	557	571	189	4,575
Tuberculosis...	1,313	1,258	1,245	448	1,559	2,573	1,840	1,142	1,722	1,446	1,602	1,353	17,501
Typhoid fever.	186	405	637	193	193	94	55	89	82	55	52	51	1,963
Veneral diseases.....						328	63	2	14				407
Chancroid.....						1	24	18	16	24	36	40	159
Gonorrhea.....					1	1	203	223	223	383	671	719	2,424
Syphilis.....						1	124	123	237	212	281	388	1,366

TABLE III—SHOWING THE REPORTS OF FIFTEEN PRINCIPAL COMMUNICABLE DISEASES FOR THE ENTIRE STATE OF ILLINOIS BY MONTHS FOR THE YEAR JULY 1, 1918, TO JUNE 30, 1919

Diseases.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Diphtheria....	487	362	604	990	703	705	731	769	665	635	668	470	7,789
Influenza.....			541	145,067	40,806	43,304	28,354	13,369	10,486	2,029	166	20	284,142
Malaria.....	2	1	3				18	20	55	97	2	1	199
Measles.....	273	121	56	141	67	171	711	1,072	2,453	5,754	5,204	3,142	19,165
Meningitis, epidemic cerebrospinal....	26	14	16	8	4	12	20	16	14	11	18	12	171
Poliomyelitis, acute infectious.....	43	73	79	18	2	2	9	3	7	4	13	12	265
Scarlet fever...	150	101	231	189	201	208	440	588	662	586	495	289	4,140
Whooping cough.....													7,214
Pneumonia.....	142	68	255	10,375	2,274	2,596	1,160	820	890	600	562	355	20,037
Smallpox.....	103	73	26	42	36	114	322	284	465	567	554	442	3,028
Tuberculosis...	1,563	1,182	973	891	1,208	637	1,390	1,397	1,436	1,923	1,586	1,723	15,909
Typhoid fever.	212	241	286	102	24	86	33	33	39	47	32	64	1,199
Veneral diseases.....		6			126								132
Chancroid.....	51	36	32	24	29	29	32	51	28	47	42	44	445
Gonorrhea.....	643	598	803	524	387	347	387	544	533	584	620	739	6,709
Syphilis.....	359	257	199	172	220	131	159	274	253	272	254	317	2,569

TABLE IV—SHOWING THE REPORTS OF FIFTEEN PRINCIPAL COMMUNICABLE DISEASES IN THE CITY OF CHICAGO BY MONTHS FOR THE FISCAL YEAR JULY 1, 1917, TO JUNE 30, 1918—MORBIDITY SUMMARY

Diseases.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Diphtheria....	613	479	726	395	1,391	854	690	456	452	462	448	457	7,423
Influenza.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Malaria.....	638	149	68	41	225	192	210	239	303	375	578	308	3,326
Measles.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Meningitis, epidemic cerebrospinal....	37	31	30	29	18	23	33	26	35	39	34	14	349
Poliomyelitis, acute infectious.....	8	66	239	217	51	7	5	1	9	10	3	10	626
Scarlet fever....	512	228	324	176	451	405	310	224	219	188	163	100	3,300
Pneumonia.....	.....	.....	.....	.....	.....	229	453	583	1,708	1,831	680	163	5,647
Smallpox.....	61	18	10	2	14	29	64	80	57	31	13	5	384
Tuberculosis....	1,204	1,049	.....	417	1,506	1,455	1,781	1,279	1,896	1,639	1,961	1,645	15,832
Typhoid fever.	17	40	67	20	.....	19	19	14	23	13	15	19	326
Veneral diseases.....	.....	.....	.....	.....	.....	309	.....	.....	.....	.....	.....	.....	309
Chancroid.....	.....	.....	.....	.....	.....	.....	19	18	12	16	41	31	137
Gonorrhea.....	.....	.....	.....	.....	.....	.....	202	174	175	275	489	550	1,865
Syphilis.....	.....	.....	.....	.....	.....	.....	123	104	203	200	286	298	1,214

TABLE V—SHOWING THE REPORTS OF FIFTEEN PRINCIPAL COMMUNICABLE DISEASES FOR THE CITY OF CHICAGO BY MONTHS FOR THE FISCAL YEAR JULY 1, 1918, TO JUNE 30, 1919—MORBIDITY SUMMARY

Diseases.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Diphtheria....	324	264	392	607	502	558	701	541	553	460	527	413	5,842
Influenza.....	.....	.....	437	34,792	2,490	9,063	4,636	2,075	1,347	430	421	17	55,708
Malaria.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Measles.....	192	78	51	101	61	181	347	580	1,609	3,873	4,285	2,846	14,304
Meningitis, epidemic cerebrospinal....	18	14	12	7	5	.....	14	10	11	7	17	6	121
Poliomyelitis, acute infectious.....	17	28	15	5	.....	5	8	2	5	4	11	4	104
Scarlet fever....	92	62	163	104	106	163	235	268	298	238	233	185	2,197
Pneumonia.....	68	61	261	11,290	.....	450	825	1,428	1,302	1,114	540	330	17,669
Smallpox.....	6	7	10	1	.....	13	21	5	24	7	13	5	112
Tuberculosis....	1,492	1,203	347	898	763	871	1,328	4,263	1,274	1,713	1,467	1,683	17,302
Typhoid fever.	29	59	53	20	7	10	10	6	12	17	16	19	258
Veneral diseases.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chancroid.....	35	26	25	21	25	29	25	45	30	24	53	37	375
Gonorrhea.....	455	423	447	294	282	287	324	422	460	480	390	584	4,848
Syphilis.....	285	304	160	158	189	146	143	249	227	242	340	311	2,754

On September 23, the post-master at Elco developed influenza and on the same day a cousin of the soldier was afflicted with the disease, complicated with pneumonia. On September 26, the soldier returned from Cairo to Elco where he developed complicating broncho-pneumonia.

On September 22, the soldier's fiancée developed influenza with complicating broncho-pneumonia, and at the same time a daughter of the post-master and a cousin of the soldier became victims of the disease.

Within the next few days, cases developed in every home in the village. The majority of the people occupied three or four room houses or cottages and a most intimate relationship existed between them. On account of the fact that the community is peculiarly isolated, there has been constant intermarriage among its inhabitants until practically all the persons residing there are related to each other. More than is ordinarily the case, the people in Elco, at the outbreak of the epidemic, practiced the rural custom of visiting the afflicted persons in large numbers.

Of the population of 236 people in Elco, the house to house canvass afterward carried out, developed the fact that 209, or over 84 per cent, had been victims of the disease and of this number seven had died.

The epidemic quickly ran its course and the disease disappeared, the nearby villages being in no way affected until some weeks later when influenza extended throughout the entire State from the Great Lakes Naval Training Station and other points in northern Illinois.

Unlike the isolated community of Elco, the territory around the Great Lakes Naval Training Station is thickly populated and there is constant travel and interchange of population. By September 22, the disease made its first appearance in Chicago and on October 1, it invaded Camp Grant, located near the city of Rockford, spreading through this camp with great morbidity and very high mortality.

On September 25, the State Department of Public Health promulgated rules and regulations for the control of influenza making all cases of the disease or suspected disease reportable by physicians, nurses, parents, school authorities, and hospital and institutional authorities and requiring isolation of the patient and other precautionary measures. On September 28, the Council of National Defense created an Illinois Influenza Commission, made up of representatives of the army, the navy, the United States Public Health Service, the American Red Cross and the State Department of Public Health and the Chicago health department this commission holding conferences in Chicago almost daily until the more severe stage of the epidemic had passed in northern Illinois.

Simultaneously with the creation of the Illinois Influenza Commission, the State Department of Public Health opened offices in Chicago through which its representatives could be kept in close touch with the situation in the Great Lakes district and in northern Illinois, and the director would be enabled to attend the daily conferences of the commission.

Early in the epidemic, appeals were received from stricken communities, particularly for physicians and nurses. On account of the fact that large numbers of Illinois physicians had engaged in military service,



scores of communities were left without medical men of any kind and were compelled to rely upon physicians residing long distances away. In other communities, the physicians themselves fell victims to the disease leaving their people without medical attendance.

In connection with the offices established in Chicago, the State Department of Public Health created a special bureau for supplying physicians and nurses. An arrangement was perfected with the United States Public Health Service whereby funds were provided for the salaries and traveling expenses of physicians who were temporarily commissioned as acting assistant surgeons of the Public Health Service. An arrangement was also completed with the Central Division of the American Red Cross whereby nurses were furnished on demand.

These physicians and nurses, together with all of the field staff and employees of the State Department of Public Health who could be withdrawn from other activities for influenza work, not only gave medical and nursing attention to the afflicted, but were instrumental in the creation of emergency organizations, the opening of special hospitals and in the supplying and distribution of material relief. Hospitals were opened in school buildings, public halls, churches and dwellings and in many instances, community kitchens were set up from which nourishing food was distributed to the afflicted in their homes.

From the very beginning of the epidemic, it was apparent that added difficulties would be encountered through the breaking down of the local health departments under the unusual strain. In spite of the protests of the State Department of Public Health, a large number of Illinois communities still retain the part-time services of physicians or employ laymen as health officers, or depend upon the unpaid services of physicians or laymen as members of local boards of health. Just at the time when the public demands were the greatest, these underpaid or unpaid physicians found their private practices larger than ever before, and except in unusual instances, local public health work was abandoned, the physicians devoting themselves to their private affairs. It is to be hoped that the tragic experience of the influenza epidemic will impress upon communities the folly of part-time health officer service and the necessity for the support of local health departments on a basis at least as liberal as that accorded to fire departments and police departments.

Early in October, the Surgeon General of the United States Public Health Service, transmitted a communication recommending that all places of public gathering throughout the State be closed. This communication was immediately transmitted by telegraph to all municipal officials in the State with the added recommendation that the restriction should be applied as local conditions seemed to require. On October 2, the rules for the control of influenza were revised and revisions were also made on October 12, and October 16.

In spite of the seriousness of the epidemic, it was exceedingly difficult to apply rigid restrictive rules uniformly and simultaneously

throughout the State. The epidemic began in the extreme northern end of Illinois, which is almost four hundred miles in length, and spread over the State as a great wave, for the most part, following the main avenues of travel. While the disease raged in the vicinity of Chicago, no cases had as yet been reported in central or southern Illinois. When the disease was most prevalent in central Illinois, the epidemic had entirely subsided in communities in the extreme north, while cities and villages in the southern part of the State were so far unaffected. It was consequently necessary to apply rules and restrictive measures according to the conditions existing at the time in the individual communities.

After repeated conferences with the Illinois Influenza Commission, the Department of Public Health issued orders prohibiting public dances, public funerals, and stock sales, closing theatres and motion picture houses and prohibiting all public gatherings not essential to the conduct of the war. Schools were permitted to remain open providing they had adequate medical and nursing supervision. The wisdom of this provision has been convincingly demonstrated since that time. Not only did the employment of medical inspectors and school nurses go far toward controlling the prevalence of influenza among school children, but it had a definite effect upon the prevalence of other communicable diseases for months to come. A large number of Illinois communities which, prior to that time, had showed no concern over the health of school children were so convinced of the value of school medical service that they have made such service permanent.

Realizing the need of educating the public during this critical period in matters of personal hygiene, the Department of Public Health maintained a continuous news service through the newspapers of the State and distributed over a third of a million pamphlets on influenza and pneumonia. Mayors, city councils, school boards, employers of labor, officials of churches, hospital authorities and the public generally, were advised as to the measures which would have the most influence in controlling the spread of disease.

The greatest stress was laid upon the necessity for isolating all persons suffering from colds and attention was called to the fact that this would continue to be imperative until more definite means of diagnosing influenza from ordinary colds could be developed. Under the rules of the department, all persons suffering from apparent "common colds" were regarded as victims of influenza and were isolated and placed under proper restriction. The department also required that face masks be worn by physicians and nurses while attending influenza patients and required the same precaution on the part of all visitors in hospitals, who were admitted only in case of grave emergency. The department issued special educational material calling attention to the value and the limitations of face masks, insisting that such masks must be properly made and properly cared for, directions for making suitable masks being included in the circulars issued.

As a result of the conferences of the Illinois Influenza Commission and investigations of the commission as to the various vaccines advocated as a means of prevention, the health department of the city of Chicago began the preparation of a mixed vaccine, quantities of which were generously supplied to the State Department of Public Health and, by the department, distributed to the physicians of the State on request.

At the time of this distribution, the State Department of Public Health held that the use of vaccines was entirely experimental and that the results obtained up to that time were not sufficient to justify any definite recommendations or assurances. The emergency was great and many authorities seemed to have confidence in a preventive vaccine and the department merely placed itself in a position to supply such vaccine in case it was desired for use.

The physicians who used this vaccine were asked to make reports on the results of the immunization obtained to the Illinois Influenza Commission, but the reports received were of little or no value. The results reported varied in the greatest extreme. Some physicians not only declared that the vaccine gave complete immunity, but went so far as to assert that it had proven curative—a claim which had never been made for it in any way—while other physicians not only denied any preventive value, but went so far as to say that the vaccine, when employed, increased the susceptibility of the individual. Between these extremes were all manner of observations.

The report of the results obtained from the use of this particular vaccine and of other vaccines was made by a committee at a meeting of the American Public Health Association held in Chicago and was to the effect that no influenza vaccine has proven efficacious up to the present time, but that it is worth while to employ anti-pneumococcic vaccines experimentally.

During the summer of 1919, outbreaks of so-called "epidemic colds" were reported in many sections of the State and there was grave apprehension on the part of national, State and local health authorities that the influenza epidemic would recur during the winter of 1919-1920. As these pages are written, there appears to be little likelihood that such a recurrence will be experienced. Sporadic cases of influenza are still being reported in considerable numbers and there is believed to be an increase in pneumonia and other respiratory diseases.

Considerable discussion has arisen to the effect of the influenza epidemic on the development of pulmonary tuberculosis. While it is obvious that the incidence of influenza will not develop and has not developed pulmonary tuberculosis *de novo*, there seems to be no question but that thousands of cases of quiescent, dormant, or arrested tuberculosis throughout Illinois have been reactivated by influenza and influenza-pneumonia. The Division of Tuberculosis of the State Department of Public Health, while making no definite statement as to the exact relationship between the two diseases, reports, from information obtained



from Illinois sanatoria and dispensaries, that approximately 60 per cent of the persons known to have developed active tuberculosis within the past few months were victims of the influenza epidemic of last year, the history of the active tuberculous condition very frequently dating from that time.

#### TYPHOID FEVER

During the fiscal year ending June 30, 1919, there were reported to the Division of Communicable Diseases, 1,199 cases of typhoid fever, as compared with 1,963 cases for the fiscal year ending June 30, 1918.

During the year, there were several severe epidemics of the disease, one at Moline which was found to have been due to the opening of a valve at the municipal water works admitting directly into the mains the raw water from the Mississippi River. In this epidemic there were over 180 cases reported. A second outbreak of typhoid and para-typhoid in Moline was found to be due to the use of polluted water from what is known as the "McGovern Well."

An epidemic of typhoid fever occurred at Galesburg with over 30 cases; in the rural district of Lake County with 36 cases; in the rural districts of Madison County with 29 cases; in the rural districts of Randolph County, including the city of Sparta, with 87 cases and in the city of Jacksonville with 67 cases.

An epidemic, with 43 reported cases, occurred in Joliet, Will County, a community which has had a typhoid fever outbreak almost every year confined to a section which is unsewered and in which there is a limestone foundation. This section of the city is given over to the foreign population and in it there is considerable congestion in housing and a number of open polluted wells are used.

On the whole, public education has gone far toward reducing the incidence of typhoid fever in Illinois. Practically all intelligent people are now aware that the disease is entirely preventable and most municipalities have come to realize the urgent need of pure water supply as a community asset.

The greatest danger from typhoid epidemics in the future will lie in the rural communities, and particularly in the country towns where there is beginning to be considerable congestion of population without adequate means of obtaining pure water supply and of sewage and waste disposal.

#### MALARIA

There has always been a certain amount of confusion in the minds of the medical profession and the general public as to malaria, and this confusion is doubtless responsible in some measure for the failure on the part of the Division of Communicable Diseases to receive anything like complete reports of cases occurring in Illinois throughout the past fiscal year. By a great many persons, malaria is not regarded as infectious or communicable. Particularly in the southern part of the

State, a great many vague and indefinite conditions, probably having no relationship whatever with malaria, are attributed to the disease, while in those wide expanses of Illinois in which malaria is known to prevail continuously, a great many of the people have become accustomed to it and remain untreated or attempt their own cure with patent medicines without bringing the cases to the attention of the medical profession.

The 199 cases of malaria reported during the past year constitute but a trifling percentage of the large number of cases that unquestionably must have occurred, the insignificance of these reports being apparent when it is known that 150 deaths were ascribed to the disease during the fiscal year ending June 30, 1918.

One of the most important health problems with which the Illinois State Department of Public Health must deal in years to come, is that of the suppression of malaria, which, during the fiscal year beginning July 1, 1917, is said to have cost the State over \$2,600,000 in loss of life, medical care, nursing, burials and loss of productive labor. Those who are familiar with the malaria problem in many sections of the State declare that this figure is far too conservative.

In spite of the hazy and indefinite idea prevailing in many quarters regarding this disease, a great deal can be done by the systematic sterilization of malaria carriers, as suggested by Bass of New Orleans, and of sanitary engineering projects to do away with the breeding places of mosquitos. Before these projects can be placed in extensive operation, however, it will be necessary to carry out a more extensive educational campaign to impress upon the minds of public officials and the people that the scourge of malaria is as preventable as it is costly.

#### SMALLPOX

During the fiscal year just ended, there was decided decrease in the number of cases of smallpox reported to the Division of Communicable Diseases. While there were 4,475 cases reported during the previous fiscal year, there were but 3,028 cases reported during the year ending June 30, 1919. Even with this decided decrease, which is perhaps due to accidental causes rather than anything else, the smallpox situation, not only in Illinois, is very discouraging.

In the present state of our knowledge, smallpox is an absolutely unnecessary scourge. It may be prevented by a simple and harmless vaccination which costs little to apply and yet, investigations made by the Division of Communicable Diseases, indicate that there are many communities in Illinois where not over five per cent of the population have availed themselves of this definite protection.

While there have been no very wide-spread or severe epidemics, there have been a number of invasions by the disease, entailing human suffering, loss of life and disturbance of business and social affairs which could readily have been avoided. In one outbreak at Elgin, 88 cases



were reported; in Galesburg 76 cases; Fulton County 73 cases; Jasper County 29 cases; Kane County, outside of Elgin, 95 cases.

The decrease in smallpox, where vaccination is generally employed, is so striking as to require no wordy discussion. In the city of Chicago, which contains almost one-half the population of the State, there were but 112 cases of smallpox during the past fiscal year, while in the other parts of the State there were over 3,000. Vaccination is very much more general in Chicago than in the rural communities. In the states of New York and Massachusetts, where vaccination has been made general through campaigns of education, smallpox is practically unknown and almost no restrictive measures have to be employed. In fact, in a recent fiscal year, the state of New York had only 35 cases of smallpox reported—a state very much larger than Illinois—with only about ten per cent as many cases of smallpox.

#### MEASLES

While measles has been popularly regarded as one of the “minor communicable diseases of child life,” it is noted that this disease, during the past year, has caused twice as many deaths as scarlet fever, judging merely from the death certificates in which measles is definitely given as the cause of death. As a matter of fact, the mortality from measles cannot be accurately determined from the death reports, inasmuch as deaths may be due to complicating broncho-pneumonia, or to acute tuberculosis following the measles attack. Hence, it may be stated that measles is responsible for even a higher death rate than is accredited to it in our mortality statistics and becomes one of the very serious menaces of child life.

During the fiscal year, ending June 30, 1919, there were 19,165 cases of measles reported, this being about twice as many cases as were reported during the previous fiscal year. It is not certain, however, that this figure indicates a much greater prevalence of the disease. With a gradual process of education, physicians are coming to report their measles cases with greater regularity and this large increase may consequently mean a closer observance of the rules and regulations of the Department of Public Health.

During the year, there were 14,304 cases of measles reported from Chicago, where reports of communicable diseases are more general than elsewhere in the State. In Evanston there were 1,020 cases reported; in Galesburg 160 cases; in McHenry County 67; and in the city of Rockford 648 cases.

The cities of Chicago, Rockford and Evanston do not constitute a full half of the population of Illinois and yet these three communities reported 15,722 cases of measles during the year as compared with 3,393 cases from the rest of the State. In the three cities named, health administration is generally satisfactory and it is believed that this great

discrepancy is due to lack of observance of health regulations in other communities of the State.

#### SCARLET FEVER

During the past fiscal year, there were 4,140 cases of scarlet fever reported to the Division of Communicable Diseases as compared with 5,084 for the fiscal year ending June 30, 1918, or a decrease of 1,663 cases.

During the past year, there were outbreaks of scarlet fever in epidemic proportions at Quincy, Mt. Sterling, DeKalb, Kankakee and La-Salle.

#### DIPHTHERIA

Throughout the entire State, including the city of Chicago, the number of cases of diphtheria reported to the Division of Communicable Diseases during the past fiscal year shows a decided decrease as compared with the previous fiscal year. In the State as a whole, the number of cases reported during the year ending June 30, 1917 was 7,789 while, during the previous year, there were approximately 11,000 cases reported. The greatest number of cases of diphtheria during the past year was reported from Chicago, a total of 5,842 as compared with diphtheria reports in Chicago for the previous year numbering 7,423.

In spite of this general decrease in diphtheria cases, the cost in human life and human suffering of this disease is deplorable and well-nigh inexcusable. Laboratory methods of diagnosis diphtheria have been developed along the simplest possible lines and the State Department of Public Health has made laboratory diagnoses available not only at the central laboratory at Springfield, but in the several branch laboratories throughout the State. The determination of whether or not an exposed person or contact is immune from the disease is a very easy matter and in case the individual is not immune, complete immunity may be secured through the use of toxin-antitoxin or through prophylactic doses of antitoxin which protects the individual thoroughly for a short period of time.

In addition to the progress which may readily be made in extending immunity to individuals, diphtheria antitoxin, which is distributed by the State Department of Public Health without cost, regardless of the financial condition of the individual, is a specific cure if used early and in proper doses.

In spite of the fact that the State has placed at the disposal of all persons the absolute means of prevention, immunization and cure, it is to be noted that there were 1,058 deaths from diphtheria during the fiscal year ending June 30, 1918, 959 of which occurred in the city of Chicago, and it is further to be noted that diphtheria cost the people of Illinois in human lives, medical attendance, burials and loss of gainful occupation considerably over a million dollars during the same year.

Perhaps the most direct means of reducing unnecessary morbidity and mortality from diphtheria will come through the education of physicians, parents and school authorities whereby cultures will be taken from all "simple sore throats" to determine whether or not there is diphtheric infection. In a great many outbreaks of this disease that have been reported throughout the State, the first cases were practically ignored in the belief that they were cases of simple throat infection.

#### MENINGITIS

During the fiscal year ending June 30, 1919, there were but 121 cases of epidemic cerebro-spinal meningitis reported to the Division of Communicable Diseases, as compared with 349 cases for the previous year. There were no serious epidemics in any section of the State.

#### ACUTE POLIOMYELITIS

The decrease in the number of cases of acute poliomyelitis during the past fiscal year is exceedingly gratifying. There were only 265 cases reported, as compared with 867 cases for the previous year, and yet it is possible that the conditions throughout the State have been even better than indicated by these figures. The educational work of the State Department of Public Health during the past few years and, particularly, at the time of the great Eastern epidemic of a few years ago, has resulted in greater care on the part of the medical profession in the diagnoses of cases which in any way resemble infantile paralysis, and great improvement in the reporting of suspected cases.

Of the 265 cases reported during the year ending June 30, 1919, 111 were found in Cook County, of which 71 were in the city of Chicago, 5 in Evanston and 26 in Oak Park. From Kankakee 20 cases were reported; JoDaviss County 7 cases; Kane County 9 cases; DeKalb County 25 cases and Putman County 20 cases.

#### WHOOPIING COUGH

Whooping cough is another of the so-called "minor diseases of childhood," which causes a great deal more destruction of human life than is generally appreciated. During the fiscal year ending June 30, 1918, there were 708 deaths from whooping cough in Illinois, or twice as many as were due to measles, and nearly three times as many as were due to scarlet fever.

During the fiscal year ending June 30, 1919, there were 7,214 cases reported, as compared with 14,304 cases during the previous year.

Since there is at this time no specific means of determining the immunity of a child to whooping cough, and no specific means of treatment, our chief reliance in overcoming this disease must be placed upon a thoroughgoing campaign of education impressing upon the parents of the State that if every precaution is taken to guard the child from infection during early life, there is a likelihood that he may escape the disease

altogether, through that immunity which seems to be acquired in later years.

The old time theory that children may as well be exposed to the so-called "minor contagious diseases" has been a murderous doctrine, responsible for the enormous wastage of thousands upon thousands of human lives.

#### PNEUMONIA

The records of the Division of Communicable Diseases relative to the reports of cases of pneumonia during the year ending June 30, 1919, are of interest chiefly in reflecting the seriousness of the influenza epidemic and the frequency with which pneumonia complicated that disease. The figures also indicate perhaps a more general observance of the rules and regulations of the department relative to the reporting of pneumonia which has only recently come to be regarded by local health officials and by practicing physicians as a communicable disease subject to public control.

During the past fiscal year there were 20,097 cases of pneumonia reported, as compared with 5,485 during the previous fiscal year.

#### THE COST OF COMMUNICABLE DISEASE

There is always a tendency to regard human life and human suffering lightly until death and disease come close to the individual, and even then the lesson seems readily forgotten. It is a strange commentary upon the intelligence and feelings of the people that loss from communicable disease expressed in dollars and cents is more convincing and impressive than when expressed in grief and sorrow and human suffering, but such is unquestionably the case.

In the annual report of the State Department of Public Health for the fiscal year ending June 30, 1918, there was published a table showing the financial loss from preventable disease and it is believed that this table and the facts contained in it have gone further toward securing public and official attention to disease prevention than any other argument or evidence ever offered. The data afforded a specific way of impressing upon city and county officials the actual tremendous cash penalty their communities were bearing annually on account of the failure to provide adequate means of disease prevention and upon individual citizens the price they themselves are paying for their personal indifference and for the disregard of good local health administration for which, in the last analysis, the private citizen is responsible.

In computing the cost of communicable diseases the following definite factors were taken into consideration and in every instance it is believed that the figures employed result in an under-statement rather than an exaggeration of the facts; cost of human life computed at \$3,000 for the adult and \$500 for the child; cost of burial \$100 for the adult and \$50 for the child; estimate of the number of cases of illness for



each death from disease prepared upon recognized epidemiological standards; the cost for medical and nursing care for the sick and the value of the loss of time from productive or gainful occupation. In these computations each disease was given careful and separate consideration and it is believed that the resultant figures state the case as clearly and accurately as it can be stated.

In a similar table for the fiscal year ending June 30, 1919, which is presented herewith,\* certain minor changes were deemed advisable and the diseases of rabies, septic sore throat, influenza and gonorrhea and syphilis have been included. During the previous year many of the cases of epidemic meningitis were found among soldiers in the military cantonments of Illinois, and on this account this disease was reckoned as partly a disease of adults and partly a disease of childhood. Inasmuch as there have been practically no cases of epidemic meningitis among adults during the past year, the disease has been reckoned as purely one of childhood and the figures reduced accordingly.

In previous years influenza was not a factor of sufficient importance to justify its consideration in this table, but the epidemic of the autumn of 1918 and the winter of 1918-19 was of such magnitude that it placed this disease in first rank as a cause for human illness, sacrifice of life and consequent financial loss.

As a matter of fact, during the past fiscal year, influenza stood second only to tuberculosis as a source of financial loss to the State, the total cost being estimated at \$73,710,000; if the influenza loss be combined to the loss from pneumonia the total would amount to about \$122,343,803, making the combined cost far in excess of any single disease. It is not fair to assume, however, that all of the pneumonia mortality or morbidity is attributable to the influenza epidemic, since pneumonia cost the State something over \$30,000,000 during the previous fiscal year when influenza was not an important factor. If we assume the increase in pneumonia cost during the past fiscal year as compared with the previous fiscal year, as being the result of the influenza epidemic, we find that this pneumonia cost amounts to \$18,633,795 which, added to the cost of influenza, gives a total of \$92,343,795.

The cost of tuberculosis during the fiscal year ending June 30, 1918, was approximately \$115,000,000 and during the past fiscal year this was reduced by about \$23,000,000 with the cost of tuberculosis during the year of \$92,723,000.

It is interesting to note that even though reduced very materially and to a point lower than has been attained in any previous year, tuberculosis still costs the State of Illinois a larger amount annually than the total cost of the tragic devastating and overwhelming influenza-pneumonia epidemic.

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\*Page 36-38.

## COST OF COMMUNICABLE DISEASES—FISCAL

County.	Estimate popula- tion Jan. 1, 1919.	(1) Typhoid.	(4) Malaria.	(5) Smallpox.	(6) Measles.	(7) Scarlet fever.	(8) Whooping cough.	(9) Diphtheria.	(10) Influenza.
1. Adams.....	*64,588	\$ 40,800	\$ 38,200	\$ 1,800	\$ 2,100	\$ 2,200	\$4,570	\$ 3,175	\$ 718,600
2. Alexander.....	25,699	35,700	210,600	300	9,450	25	3,450	3,200	274,075
3. Bond.....	17,949	10,200	76,400	300	1,050	-----	1,300	800	41,800
4. Boone.....	*15,481	1,600	-----	-----	130	100	360	800	30,250
5. Brown.....	*10,397	200	-----	1,800	10	1,350	70	-----	83,225
6. Bureau.....	46,934	10,200	-----	400	1,050	1,300	3,150	800	460,775
7. Calhoun.....	*8,610	-----	-----	-----	1,050	50	6,800	3,200	90,375
8. Carroll.....	*18,035	10,200	-----	-----	1,050	450	1,240	-----	142,175
9. Cass.....	17,501	400	-----	100	10	75	50	2,400	261,750
10. Champaign.....	55,539	25,500	-----	6,900	4,200	1,300	2,100	5,950	798,950
11. Christian.....	*35,309	10,200	-----	5,500	290	1,300	3,450	3,200	561,900
12. Clark.....	*23,517	5,100	-----	100	1,050	450	1,150	25	224,775
13. Clay.....	*18,661	20,400	-----	100	40	100	11,050	-----	200,250
14. Clinton.....	25,480	51,000	38,200	-----	-----	2,600	6,800	800	211,975
15. Coles.....	34,842	10,200	30,200	-----	4,200	1,175	2,100	4,000	455,700
16. Cook.....	2,904,800	178,500	9,780	15,500	421,950	100,875	115,380	531,450	30,442,200
17. Crawford.....	32,490	400	-----	-----	-----	-----	2,100	1,600	271,275
18. Cumberland.....	*14,281	1,800	-----	200	10	-----	70	-----	128,950
19. DeKalb.....	34,953	600	-----	600	20	1,800	1,050	1,425	397,400
20. DeWitt.....	*18,906	10,200	-----	4,300	1,050	1,300	210	800	272,450
21. Douglas.....	20,024	5,100	-----	200	1,050	-----	3,450	800	235,000
22. DuPage.....	38,044	25,500	-----	1,000	80	250	430	2,400	275,300
23. Edgar.....	*27,336	5,100	-----	-----	1,050	25	50	1,175	278,400
24. Edwards.....	*10,049	15,300	19,100	-----	1,050	75	10	-----	88,850
25. Effingham.....	*20,055	20,400	-----	200	10	475	110	1,600	285,300
26. Fayette.....	28,083	76,500	19,100	1,800	3,150	250	2,100	800	288,550
27. Ford.....	*17,096	5,100	-----	-----	10	375	1,050	1,600	223,150
28. Franklin.....	31,466	102,000	95,500	3,200	4,200	50	10,500	4,000	813,500
29. Fulton.....	52,501	200	-----	7,300	40	50	7,850	4,000	800,950
30. Gallatin.....	*14,628	30,600	70,200	300	-----	25	10	1,600	176,950
31. Greene.....	*22,363	10,200	19,100	1,100	1,050	100	3,150	3,200	289,350
32. Grundy.....	24,183	10,200	-----	-----	-----	1,300	3,150	25	348,475
33. Hamilton.....	*18,227	35,700	-----	3,200	3,150	-----	1,150	800	126,575
34. Hancock.....	*30,638	5,100	-----	100	3,150	1,300	1,150	1,600	320,450
35. Hardin.....	*7,015	-----	35,100	-----	2,100	-----	3,450	-----	170,875
36. Henderson.....	*9,724	400	-----	100	40	25	290	-----	75,550
37. Henry.....	43,224	25,500	-----	400	230	50	780	1,600	427,275
38. Iroquois.....	*35,543	5,100	320	200	1,050	1,300	1,150	825	373,200
39. Jackson.....	36,263	66,300	140,400	1,100	10	175	5,750	1,600	467,600
40. Jasper.....	*18,157	5,100	-----	2,900	2,100	25	1,150	800	153,450
41. Jefferson.....	29,973	45,900	38,200	-----	1,050	50	4,200	2,400	50,250
42. Jersey.....	*13,954	5,100	-----	-----	10	-----	90	-----	106,150
43. JoDaviess.....	*22,657	-----	-----	200	-----	1,800	250	-----	161,050
44. Johnson.....	*14,331	15,300	-----	-----	1,050	-----	4,200	1,600	175,525
45. Kane.....	103,386	20,400	14,200	22,200	80	1,575	3,150	9,600	1,146,525
46. Kankakee.....	43,919	25,500	-----	-----	30	2,600	2,100	550	603,550
47. Kendall.....	*10,777	-----	-----	-----	-----	-----	2,300	-----	91,000
48. Knox.....	48,405	20,400	-----	9,600	2,860	375	2,100	100	183,675
49. Lake.....	73,180	40,800	3,260	100	9,450	5,200	4,200	17,600	3,442,150
50. LaSalle.....	92,208	25,500	-----	2,700	1,150	2,700	10,500	7,200	1,407,025
51. Lawrence.....	28,072	5,100	70,200	3,400	1,050	100	8,400	3,200	192,325
52. Lee.....	*27,750	5,100	-----	3,400	10	1,000	3,150	50	209,425
53. Livingston.....	*40,465	600	11,100	300	1,950	25	80	150	461,450
54. Logan.....	*31,564	5,100	-----	700	2,100	525	60	1,600	384,975
55. Macoupin.....	63,163	30,600	11,100	800	10	375	3,150	10,400	645,550
56. Madison.....	58,116	5,100	-----	5,200	30	675	6,300	3,125	700,450
57. Marion.....	112,027	90,900	38,200	12,500	100	6,500	11,550	9,600	1,339,525
58. Marshall.....	39,188	46,900	19,100	5,700	2,100	1,300	4,200	2,400	560,175
59. Mason.....	*15,679	5,100	-----	6,100	120	1,300	1,080	2,400	137,700
60. Massac.....	*17,377	10,200	-----	2,400	60	3,600	1,150	100	193,650
61. McDonough.....	15,157	25,500	70,200	-----	1,050	1,300	1,150	2,400	41,850
62. McHenry.....	26,887	14,200	-----	100	10	1,300	1,150	75	274,225
63. McLean.....	34,930	5,100	-----	1,900	1,240	25	1,150	175	256,225
64. McLean.....	68,149	30,600	-----	6,000	2,100	2,600	1,150	1,600	849,100

## DIVISION OF COMMUNICABLE DISEASES

37

YEAR—JULY 1, 1918, TO JUNE 30, 1919

(23)	(28 and 35 inclusive and 90)	(37)	(38)	(61C)	(63D)	(91 and 92)	(100D)		
Rabies.	Tuberculosis.	Syphilis.	Gonococcus infec- tion.	Epidemic meningitis.	Poliomyelitis.	Pneumonia.	Septic sore throat.	County total.	Per capita.
.....	\$ 905,900	\$ 13,159	\$ 8,175	.....	\$ 1,600	\$ 385,840	\$ 2,025	\$ 2,128,135	\$14.17
.....	789,100	12,600	.....	.....	.....	131,040	675	1,470,215	14.99
.....	52,400	.....	100	.....	800	41,860	.....	227,010	12.65
\$ 50	51,000	6,300	.....	.....	800	138,320	.....	229,710	14.84
.....	91,700	100	25	.....	.....	50,760	675	229,915	22.12
.....	314,400	12,600	.....	50	2,400	211,120	675	1,018,920	21.67
.....	117,900	.....	.....	.....	.....	25,480	.....	244,855	28.43
.....	65,500	3,150	200	800	800	18,200	.....	243,765	13.51
50	157,200	250	50	1,600	1,600	111,000	.....	536,535	30.66
150	537,100	9,650	1,150	800	4,800	297,940	675	1,697,165	30.56
.....	471,600	6,300	50	50	.....	127,400	1,350	1,192,590	33.77
50	314,400	6,300	25	800	.....	58,240	1,350	613,815	26.10
.....	366,800	.....	50	800	.....	80,080	.....	679,670	32.43
.....	196,500	6,300	.....	1,600	50	120,120	675	636,620	34.11
.....	563,300	6,300	50	800	50	234,680	.....	1,312,755	37.68
1,550	44,384,800	876,600	153,125	35,800	35,800	26,146,150	48,900	103,504,360	35.64
100	209,600	6,300	.....	.....	.....	54,600	.....	545,975	16.80
.....	157,200	3,150	125	800	800	17,800	.....	310,905	21.77
50	396,100	3,250	150	.....	39,000	123,025	.....	964,470	27.59
.....	248,900	6,300	.....	800	800	94,100	.....	641,210	33.93
50	248,900	3,150	.....	.....	800	47,300	.....	545,800	27.26
.....	527,100	3,200	.....	800	1,600	131,040	.....	968,700	25.46
.....	262,000	15,750	.....	.....	800	75,960	.....	640,250	23.42
50	117,900	.....	.....	.....	.....	32,760	.....	275,095	27.39
.....	301,300	3,150	25	1,600	.....	86,825	.....	700,995	34.96
.....	340,600	.....	.....	.....	.....	75,900	.....	808,750	28.80
.....	157,200	.....	.....	.....	1,600	56,240	.....	446,845	26.92
.....	510,900	3,150	75	50	.....	367,100	675	1,914,900	60.84
.....	445,400	3,200	175	800	.....	186,975	675	1,463,615	27.87
.....	78,600	.....	100	.....	.....	58,240	.....	416,625	28.49
.....	248,900	6,300	.....	.....	800	58,240	.....	641,490	28.68
.....	265,100	3,150	.....	50	50	109,200	.....	740,700	30.63
.....	196,500	.....	.....	.....	.....	21,840	.....	388,915	21.34
.....	262,000	3,350	250	.....	1,600	72,800	675	673,525	21.99
.....	235,800	.....	.....	800	.....	25,580	.....	473,705	67.53
.....	65,500	.....	.....	.....	1,600	14,560	.....	158,065	16.25
.....	393,000	9,450	350	800	1,600	203,840	675	1,065,550	24.64
500	301,300	9,450	.....	.....	1,600	182,000	2,025	880,020	24.76
.....	759,800	9,450	25	.....	.....	134,680	1,350	1,588,240	44.07
.....	196,500	.....	.....	.....	.....	42,330	.....	404,355	22.27
.....	471,600	3,150	25	.....	800	69,160	675	687,460	22.94
50	196,500	50	225	100	800	36,400	1,350	346,825	27.26
.....	91,700	3,150	.....	.....	1,600	61,880	675	322,305	14.23
.....	170,300	.....	.....	.....	.....	36,400	.....	404,375	28.21
.....	1,493,400	25,600	825	1,600	5,600	622,440	675	3,367,870	32.59
.....	1,034,900	6,300	.....	.....	3,200	283,000	675	1,962,405	44.68
50	104,800	3,150	.....	.....	.....	36,400	.....	237,700	22.07
.....	641,900	1,650	800	.....	50	203,840	1,350	1,068,700	22.06
500	458,500	250	3,750	4,000	150	916,200	675	4,906,785	67.04
250	1,244,500	9,450	3,575	50	800	629,720	3,375	3,348,495	36.31
50	275,100	3,150	.....	.....	.....	76,440	.....	638,715	22.72
.....	131,000	.....	3,125	800	800	76,440	.....	434,300	15.65
50	248,900	100	6,300	50	.....	203,840	1,350	935,845	23.11
100	1,480,300	50	3,175	.....	800	105,560	675	1,985,720	62.90
.....	864,600	600	14,725	.....	50	240,240	1,350	1,823,550	28.86
.....	694,300	3,900	9,600	50	1,600	207,480	1,350	1,639,160	28.20
.....	2,109,100	3,900	25,525	.....	100	706,160	675	4,360,335	38.93
.....	563,300	.....	175	.....	.....	196,560	1,350	1,403,260	35.81
.....	91,500	100	125	.....	800	29,120	.....	275,445	17.46
.....	183,400	.....	3,150	.....	.....	58,240	675	456,625	26.29
.....	379,900	.....	.....	.....	.....	105,560	.....	628,910	41.51
.....	288,200	.....	9,425	.....	800	80,080	675	670,240	24.93
.....	314,400	50	3,375	.....	800	123,760	.....	708,200	20.27
50	825,300	650	4,225	800	50	262,080	.....	1,986,305	29.14

## COST OF COMMUNICABLE

County.	Estimate popula- tion Jan. 1, 1919.	(1) Typhoid.	(4) Malaria.	(5) Smallpox.	(6) Measles.	(7) Scarlet fever.	(8) Whooping cough.	(9) Diphtheria.	(10) Influenza.
65. Menard.....	*12,796	\$ 10,200	-----	\$ 900	\$ 70	\$ 175	\$ 2,100	\$ 800	\$ 190,675
66. Mercer.....	*19,723	15,300	-----	2,900	-----	225	1,150	-----	186,475
67. Monroe.....	*13,508	25,500	-----	-----	-----	50	1,150	-----	87,500
68. Montgomery..	39,254	35,700	-----	8,900	1,150	225	4,600	2,400	391,425
69. Morgan.....	34,420	51,000	\$19,100	6,700	10	200	60	800	492,250
70. Moultrie.....	*14,630	-----	11,100	2,200	40	25	3,650	800	146,225
71. Ogle.....	*27,864	200	-----	500	90	1,750	330	1,600	149,200
72. Peoria.....	110,524	40,800	30,200	22,700	3,150	6,500	6,900	7,900	1,783,150
73. Perry.....	24,075	10,200	19,100	300	10	25	20	-----	367,350
74. Platt.....	*16,376	-----	-----	-----	10	300	130	-----	183,350
75. Pike.....	*28,622	10,200	22,200	-----	-----	75	2,700	4,800	236,175
76. Pope.....	*11,215	-----	35,100	-----	-----	-----	1,150	-----	55,900
77. Pulaski.....	16,616	25,500	35,100	2,500	-----	-----	2,300	800	201,700
78. Putnam.....	10,041	5,100	-----	-----	-----	-----	20	2,400	62,200
79. Randolph.....	30,101	76,500	35,100	900	1,560	850	7,350	1,600	398,325
80. Richland.....	*15,970	10,200	-----	2,200	10	750	50	800	91,150
81. Rock Island..	83,767	153,000	7,300	12,600	140	3,900	4,200	14,400	1,327,150
82. Saline.....	37,715	256,800	41,300	1,700	-----	275	19,450	1,600	496,350
83. Sangamon.....	108,155	76,500	-----	3,300	1,150	2,600	1,150	9,600	1,408,925
84. Schuyler.....	*14,852	800	-----	-----	-----	25	-----	-----	135,150
85. Scott.....	*10,067	5,100	-----	-----	-----	-----	-----	25	67,725
86. Shelby.....	*31,693	30,600	12,100	300	-----	1,300	1,150	25	258,500
87. Stark.....	*10,098	5,100	-----	-----	30	1,300	1,150	-----	68,100
88. St. Clair.....	149,130	107,100	76,400	7,300	3,150	3,900	11,500	17,600	2,032,475
89. Stephenson..	39,143	200	-----	800	2,100	3,900	2,300	1,600	348,575
90. Tazewell.....	34,734	15,300	-----	25,600	80	250	3,450	6,400	485,350
91. Union.....	*21,856	35,700	70,200	6,600	2,100	75	2,300	800	391,125
92. Vermilion.....	88,894	35,700	11,100	7,500	2,100	225	18,400	7,200	1,337,425
93. Wabash.....	16,965	10,400	-----	-----	20	25	1,150	800	183,225
94. Warren.....	23,442	200	3,260	700	10	525	1,150	2,400	212,600
95. Washington..	*18,759	10,200	-----	2,600	-----	75	1,150	1,600	154,475
96. Wayne.....	*25,697	25,500	70,200	600	2,100	25	400	-----	293,625
97. White.....	*23,052	25,500	-----	6,700	-----	-----	1,150	4,000	214,525
98. Whiteside....	*34,507	5,100	7,100	500	130	1,300	4,600	3,200	407,150
99. Will.....	92,841	35,700	-----	1,300	80	1,300	8,050	5,600	1,203,975
100. Williamson..	60,353	61,200	54,200	700	-----	-----	19,550	3,200	517,100
101. Winnebago....	76,649	15,300	3,260	3,800	4,900	13,000	2,300	12,000	966,525
102. Woodford....	*20,506	-----	-----	700	30	6,500	470	800	266,575
Total.....	-----	\$2,585,000	\$1,641,340	\$278,300	\$523,160	\$214,875	\$428,670	\$785,925	\$73,710,000

\* Population April 15, 1910; decreased between 1900 and 1910; no estimate made.

\*\* Based on population as estimated by the Bureau of the Census as of July 1, 1917. Decrease between estimate of 1916 and 1917. No estimate for January 1, 1916 made.

Influenza loss \$11.59 per capita.



## DISEASES—Concluded.

(23)	(28 and 35 inclusive and 90)	(37)	(38)	(61C)	(63D)	(91 and 92)	(100D)		
Rabies.	Tuberculosis.	Syphilis.	Gonococcus infec- tion.	Epidemic meningitis.	Polio-myelitis.	Pneumonia.	Septic sore throat.	County total.	Per capita.
	\$ 222,700					\$ 50,960	\$1,350	\$ 479,930	\$37.52
	131,000				\$ 50	65,520		402,620	20.41
	91,700				800	47,300		254,000	18.99
	510,100		\$ 100	\$ 800	800	185,640	675	1,142,515	29.10
\$ 50	876,900	\$ 500	16,075		800	240,240	675	1,705,360	49.53
	170,300					47,325		381,665	26.08
50	91,700		3,125	50		94,640		343,235	12.32
	2,947,500	9,750	46,775	550	1,600	658,840	4,725	5,571,040	50.41
	706,100		3,125		50	36,400		1,142,680	47.44
	144,100		3,175			47,320	675	379,060	23.15
150	327,500		3,150			91,000		697,950	24.38
	26,200					18,200		136,550	12.18
	471,600		9,375		800	120,120	675	870,470	52.40
	39,300				800	112,840		222,660	22.17
	606,100	100	3,150			94,640		1,226,175	40.73
	183,400				800	21,840		311,200	18.86
150	1,545,800	2,950	27,675	800	3,200	571,480	675	3,675,420	43.88
	706,100	150	3,225		50	97,745	1,350	1,626,095	43.12
	1,624,400	9,250	61,275		1,600	607,880	2,025	3,809,655	27.99
	104,800		25			50,960	675	292,435	19.09
	78,600		18,625		50	43,680		213,805	21.25
50	432,300	100	3,125			94,640	675	834,869	26.33
	39,300					18,200		133,180	13.19
	2,148,400	9,500	52,050	3,200	1,600	2,047,240	1,350	6,522,765	43.74
	379,900	550	9,675		800	149,240		899,640	22.98
50	340,600	350	3,725			222,040	1,350	1,104,545	31.79
	864,600					170,670		1,547,170	70.80
200	1,401,700	150	33,300		800	389,480	1,350	3,246,630	36.56
	210,300			1,600		43,680		451,200	26.60
	262,000		12,500		800	54,600	1,350	552,095	23.55
	144,100			50		32,760		347,010	18.50
	366,800	50	3,125		800	86,010		849,235	30.05
	550,200		25	50		109,200		911,350	39.53
	275,100	150	3,125		4,000	116,480		827,935	24.00
	1,244,500	3,200	3,125		250	808,080	675	3,315,835	35.71
800	641,900	150	12,500			185,640		1,496,940	24.79
	995,600	950	43,625	3,200	1,600	4,884,880	675	6,951,615	90.69
50	157,200	3,150	25		800	98,280		534,580	26.07
\$5,250	\$92,723,500	\$1,157,600	\$635,200	\$67,350	\$143,000	\$48,633,795	\$101,550	\$223,634,515	\$35.16

One is naturally staggered in view of the fact that the influenza-pneumonia epidemic cost \$11.59 to every man, woman and child in the State of Illinois, and yet, the public views with seeming indifference the fact that a higher cost or approximately \$12 per capita is made each year through another preventable and curable disease, and has been so sustained throughout generations.

In the year ending June 30, 1918, the total computed loss from communicable diseases was \$154,881,685, or a per capita loss of \$24.67. In the year ending June 30, 1919, we have added the expense of the great influenza-pneumonia epidemic and we have also included rabies, septic sore throat and venereal diseases, so that the total cost was swelled to \$223,634,515, or a loss of \$35.16 to every citizen of the State.

In considering the cost of communicable disease to the individual county, one must bear in mind certain factors which may materially increase morbidity and mortality and which result in misleading interpretations. For example: Winnebago County shows the highest cost in communicable disease of any county in the State, with a per capita loss of \$90.69. It will be borne in mind that Camp Grant, one of the largest military cantonments in the middle west and one which was sorely stricken with influenza, is situated in Winnebago County. The county having the second highest disease cost is Union, a relatively small county in which there is situated a large State charitable institution; while Lake County, which has the fourth highest disease cost amounting to \$67.04 per capita, contained the Great Lakes Naval Training Station with many thousand young men, and which was the center of the influenza epidemic. Making these allowances, it appears that Hardin County with a per capita loss of \$67.53, is paying the highest penalty for preventable disease of any county in the State. Hardin County is a singularly rural county, being situated in the extreme southern portion of Illinois on the Ohio River, having no railroad and being consequently more or less isolated. That this county should have the highest per capita cost from preventable disease tends to confirm the now recognized fact that the rural community once regarded as perfectly healthful, in reality suffers more severely from communicable disease than the larger urban communities. In many instances, the city of Chicago, largest city in Illinois and the second largest city in the Nation, has a lower per capita cost than most of the isolated rural communities.

The counties having the lowest per capita cost are Ogle, and Bond, the former with a preventable disease loss of \$12.32 per capita and Bond County with a loss of \$12.65. Regardless of the relatively low cost in the more fortunate counties, reference to the accompanying table\* will show that there is not a county in the State of Illinois in which the cost of preventable disease is so low that it would not be the part of wisdom and a matter of substantial financial economy to establish and maintain

\*Page 36-38.

a thoroughgoing health department with full-time medical health officer and an adequate complement of laboratory workers, inspectors and community nurses.

This table shows in a graphic way the need for more intelligent conservation of human life and health. The influenza-pneumonia epidemic brought home more tragically the folly of unpreparedness and yet, the average citizen is so thoughtless of these things and human memory apparently so short, that it is doubtful if many, save the most progressive and far-sighted communities, will take the step to safeguard their people.

#### DISTRIBUTION OF PREVENTIVE AND CURATIVE AGENCIES

One of the most important functions of the newly created Division of Research and Biological Laboratories will be the manufacture and distribution of preventive and curative sera and vaccines which for many years past, to a greater or less extent, have been provided without cost to the people of the State, regardless of their financial condition.

On account of the delay of organizing the Division of Research and Biological Laboratories and the many changes made in the Division of Diagnostic Laboratories, incidental to the war, the distribution of the preventive and curative agencies have been carried out during the past fiscal year by the Division of Communicable Diseases with the exception of salversan and other remedies for the treatment of venereal diseases which, on account of Federal contract, are distributed by the Division of Social Hygiene.

Illinois was one of the first states in the Union to recognize the importance and great public economy of the free distribution of diphtheria antitoxin, and as years have passed other proven agencies for the prevention of communicable diseases have been added. At the present time the State Department of Public Health distributed through several hundred agencies conveniently situated through the State, both preventive and curative antitoxin for preventive use; the Schick test to determine immunity to diphtheria; typhoid and para-typhoid vaccine; nitrate of silver solution for the prevention of blindness through infection of the eyes at birth, and smallpox vaccine for use in State institutions or in unusual emergencies.

During the fiscal year just passed, the following quantities of diphtheria antitoxin were distributed:

13,501	1,000 unit packages, chiefly for preventive use.
4,915	3,000 unit packages, for individual curative use.
10,526	5,000 unit packages, for individual curative use.
7,474	10,000 unit packages, for individual curative use.
1,550	10,000 unit packages, for institutional use.
450	20,000 unit packages, for institutional use.

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48,416 packages of 288,116,000 units.

The very great saving in dollars and cents through the free distribution of antitoxin in Illinois—a saving which amounts to almost one

quarter of a million dollars each year merely in purchase price—has been dealt with in a previous report.

During the past few years data have been collected by the Division of Communicable Diseases on 44,025 cases of diphtheria, in which 82,090 doses of antitoxin were administered. In these cases there were 2,613 deaths, or a death rate of 5.93 per cent, as compared with mortality of forty-five per cent which was the average before the use of antitoxin.

It will be borne in mind that the success of the use of antitoxin depends largely upon its being administered in sufficient dosages and administered very early in the disease. In a thousand of these cases in which death occurred the time of administration is not given, but in the remaining one thousand six hundred and thirteen cases it is found that in most instances antitoxin was not administered early and consequently that the mortality is unnecessarily high. In fact, there is reason to assume that if antitoxin had been administered in these cases at the beginning of illness, the mortality would have been reduced to an exceedingly low point, lower than that common to other diseases which are not regarded with apprehension or concern.

Of the 1,613 cases in which death occurred, and in which the date of administration of antitoxin is definitely known, it is to be noted that in only 308 cases was the administration made on the first day. Antitoxin was given on the second day in 498 cases; on the third day in 358 cases; on the fourth day in 175 cases; on the fifth day in 123 cases; on the sixth day in 73 cases; on the seventh day in 53 cases; on the eighth day in 10 cases; on the ninth day in 3 cases; on the tenth day in 18 cases; on the eleventh day in 1 case; on the fourteenth day 2 cases, and on the fifteenth day 1 case.

Of the 2,613 fatal cases, 1,388 were reported as laryngeal diphtheria.

During the same period of time antitoxin was administered to 60,690 persons in the State for the purpose of immunization. Of these, 17,220 had been exposed to diphtheria in the same house; 30,444 in the same room and 6,513 in the same bed. In 6,513 cases the degree of exposure was not indicated.

Of this 60,690 exposed persons, 1,244 or 2.5 per cent subsequently contracted the disease. Of this 1,244 persons 319 developed the disease in one day of exposure; 155 in two days; 94 in three days; 39 in four days; 65 in five days; 16 in six days; 52 in seven days; 17 in eight days; 18 in nine days; 27 in ten days; 9 in eleven days; 11 in twelve days; 8 in thirteen days; 25 in fourteen days; 6 in fifteen days; 5 in sixteen days; 3 in seventeen days; 7 in eighteen days; 4 in nineteen days; 26 in twenty-one days; 6 in twenty-two days; 4 in twenty-five days; 9 in twenty-eight days; 1 in thirty days; 8 in four weeks; 10 in five weeks; 7 in six weeks; 6 in seven weeks; and 3 in eight weeks. In 282 cases



the period after exposure in which the disease developed was not indicated.

During the fiscal year there were 6,263 packages of typhoid and para-typhoid vaccine in syringes distributed from Springfield or through the department's agencies throughout the State, as well as 10,529 packages of typhoid and para-typhoid vaccine distributed in ampules.

With the development of the Division of Research and Biological Laboratories for which provision has been made by the Fifty-first General Assembly, it is expected that additional preventive and curative sera and vaccines will be made available to the medical profession and to the people of the State, and that these will be prepared, for the most part, in the department's own laboratories, materially reducing the cost of production.

#### GENERAL CONSIDERATIONS

The great value of the systematic reporting of communicable diseases lies in the use which may be made of these reports in systematic epidemiological work. Except in special instances, where the conditions seem to warrant unusual action, it is necessary for the State Department to rely upon the local health authorities for the check-up of morbidity statistics and the follow-up of communicable disease cases. Of the 2,700 local health jurisdictions in Illinois, very few indeed are so organized as to carry out epidemiological work effectively, intelligently or well. In fact, of these 2,700 local health jurisdictions, approximately 1,500 are entirely rural, the local health authorities being the township supervisor, assessor and town clerk, men who are usually engaged in private activities who give only a small portion of their time to their public duties, and who frequently regard their functions as local health officers as of very trivial importance. In most cases the supervisor feels that he has done his full duty when he has placarded an infected house and has established a nominal quarantine. He is not disposed, as a rule, to investigate the source of infection, and, in the vast majority of instances, he is not qualified to do so intelligently, even if so disposed. In years past it has seemed almost impossible to secure adequate public health organization for these rural communities. The cost of a full-time health officer for the average township would be prohibitive. The Fiftieth General Assembly, however, enacted a district health department law (Hurd's Statutes, 1917, chapter 42, page 2276; amended June 30, 1919, and in force July 1, 1919, Session Laws 1919, page 752), whereby, on referendum vote, adjoining municipalities and townships within the same county or in adjoining counties may unite to form a health district, may levy a tax and may establish a modern health department. The law specifies that there shall be a full-time medical health officer, selected by civil service and on nomination of the State Department of Public Health, and that there shall also be suitable offices, laboratories,

inspectors, nurses and other appurtenances of a well organized health department.

Inasmuch as any number of contiguous townships or road districts or municipalities may unite under the provisions of this law, there is no community in the State which is too small to receive its advantages, and inasmuch as the funds necessary for the operation of such a department are obtained by the levying of a special tax, there can be no valid excuse for any community foregoing the benefits of this act on the plea of exhausted financial resources.

#### FUTURE PLANS

Through increased appropriations made by the Fifty-first General Assembly, it will be possible to employ two additional full-time district health officers. The district health officer plan, adopted in Illinois a number of years ago, has proven remarkably successful, although the field staff has not been large enough in the past to attain ideal results. Increased appropriations have also made possible the employment of an assistant epidemiologist and has afforded some increase in the office personnel.

During the coming year and with the resumption of relatively normal conditions, extensive activities along epidemiological lines will be carried out. While the reporting of communicable diseases is more general than has ever been known in Illinois before, such reports are still far from satisfactory and every effort will be directed toward making these reports more complete.

In addition to this all of the rules and regulations of the State Department of Public Health for the control of the various communicable diseases will be subjected to revision and rewriting, in accordance with the more advanced knowledge of disease prevention. These revised regulations will be completed early in the new fiscal year.

## DIVISION OF TUBERCULOSIS

GEORGE THOMAS PALMER, M. D., *Acting Chief*

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As stated elsewhere in this report, one of the interesting results of our participation in the world war has been the general realization of the advisability, and even of the necessity, for coordinating the activities of the large numbers of extra-governmental agencies engaged more or less directly in matters of public health with the several State health departments. The war-time experience gave a new appreciation of the value of preventive medicine. The war also awakened a tremendous popular interest in health and social problems, enlisting the services of hundreds of thousands of intelligent laymen who had previously given little thought to public affairs. Several of the powerful organizations created for war-time work were reluctant to disband and consequently cast about for a field for peace-time activity and, in almost every instance, these organizations selected some phase of public health endeavor.

Prior to the war there had been serious overlapping and duplication of effort among the volunteer agencies then existent, and this duplication became intensified by the engagement in public health work of the organizations created primarily for war purposes. One of the greatest and most difficult problems with which the State Department of Public Health of Illinois now has to deal is the correlation of volunteer health activities with a view of preventing overlapping, and at the same time of utilizing the tremendous popular interest and power which the volunteer organizations unquestionably afford.

For a number of years prior to the war, tuberculosis work in Illinois constituted one of the most conspicuous examples of the coordination of governmental and extra-governmental health organizations to be found in the United States, and, with the large problems of war-time tuberculosis, the cooperative relationship in Illinois was put to a severe test and was not found wanting.

For a number of years, the State Department of Public Health has maintained an intimate relationship with the Illinois Tuberculosis Association, an extra-governmental organization with affiliated local health societies in all parts of the State. This association has been in existence for about ten years, and has been liberally financed both by popular subscription and by the sale of Red Cross Christmas Seals, issued by the American Red Cross, the revenues from which are specifically dedicated to tuberculosis work.

For the year 1918, the Illinois Tuberculosis Association and its affiliated societies, including the local Chicago organization, had available approximately \$150,000 from the sale of Red Cross Seals, \$32,236 of which was expended for the maintenance of the State Association, the balance being distributed for local use among the affiliated societies. In 1919, on account of the tremendous importance of tuberculosis work incidental to the war, the American Red Cross requested that the State and local tuberculosis associations should not devote their time to the raising of funds, and in lieu of this, the Red Cross set aside a sum of \$2,500,000 to be distributed by the National Tuberculosis Association among the several State associations, and by them to the local organizations. Of this fund the Illinois Tuberculosis Association received approximately \$124,506, exclusive of Chicago and Cook County, \$44,861 of which was expended for its own use and the balance distributed to local organizations. In many localities, the Red Cross Seal funds did not constitute more than one-half of the total resources for tuberculosis work, the balance being raised through membership dues and popular subscriptions. It thus appears that the Illinois Tuberculosis Association, with its affiliated organizations, had available much larger sums of money than any other extra-governmental health agencies in the State, and was able to carry out a larger program of constructive work.

A number of years ago, the officers and executive committee of the Illinois Tuberculosis Association manifested to the State Department of Public Health, then the State Board of Health, a desire to carry out its program in such a way as to most effectively supplement governmental activity and the cooperative relationship entered into at that time has been made infinitely more effective through the removal of the offices of the association from Chicago to Springfield, where there is constant contact between the executives of the State Association and the officers of the State Department of Public Health.

In the plan of organization of the State Department of Public Health, made possible through the enactment of the Civil Administrative Code, it was obvious that legislative appropriations did not make possible the complete development of all divisions to the strength necessary in meeting all of the State's large and complex health problem. On this account, it was deemed advisable to develop to the greatest strength possible those divisions absolutely essential to efficient general health work, and to create in less highly developed form those phases of work which, while exceedingly important, might safely be deferred to a later time.

In the development of the Division of Tuberculosis, it was found that the plan of cooperation between the Illinois Tuberculosis Association and the State Department of Public Health had been so effective and satisfactory that, important as the subject is, it was deemed safe to make the division within the department relatively small, depending



upon the extra-governmental agencies for a large part of the tuberculosis educational work throughout the State.

The Assistant Director of the department, who for a number of years has served as president of the Illinois Tuberculosis Association, assumed the duties of Chief of the Division of Tuberculosis and, in meeting the war-time tuberculosis problem, it became his duty to coordinate the activities of the department with those of the Illinois Tuberculosis Association and the State Council of Defense, and to cooperate with the American Red Cross (particularly in the relief of returned tuberculous soldiers) and with other extra-governmental organizations.

The results of this coordinative plan has proven extremely satisfactory and there is reason to assume that, in the peace-time program of public health work now under contemplation, the Illinois Tuberculosis Association will prove extremely helpful to the State Department of Public Health and to the people of Illinois, and that on the other hand, through the popular approval of a plan so thoroughly in line with modern concepts of economy and efficiency, the relationship will add largely to the strength of the Illinois Tuberculosis Association.

#### WORK OF THE DIVISION

At the beginning of the fiscal year, the Division of Tuberculosis engaged in two cooperative enterprises to meet various phases of the tuberculosis war problem, and in addition, was carrying out those functions imposed upon it under normal conditions by the laws of the State, such as the encouragement of the observance of the rules and regulations for the control of tuberculosis and the educational and clinical work which constitute an effective program in the prevention and suppression of the disease.

In one of these coordinated enterprises, the Division of Tuberculosis worked, under contract, in conjunction with the Central Division of the American Red Cross and the Tuberculosis Association for the purpose of making adequate provision for the care of returned tuberculous soldiers, about 1,700 of whom had come back to Illinois up to that time. This contract provided that the American Red Cross, through the home service sections of its local chapters, should make first contact upon returned tuberculous soldiers, and should furnish preliminary information to the Division of Tuberculosis and to the Illinois Tuberculosis Association, whose duty it should be to provide thorough physical examination for these young men, and to aid in securing sanatorium or other adequate care and treatment. Similar contracts were ultimately adopted in a large number of the states of the Union, the vast majority of them following closely the provisions of the original Illinois agreement.

The second cooperative enterprise was represented in the so-called cooperating committee on the tuberculosis war problem, made up of the

State Council of Defense, the State Department of Public Health, and the Illinois Tuberculosis Association. This cooperating committee was created prior to the agreement with the American Red Cross and at a time when there was practically no provision throughout Illinois for the examination, care or relief of tuberculous soldiers or for otherwise meeting the tuberculosis war problem which loomed tremendous during the early months of the war.

The cooperating committee on the tuberculosis war problem ceased to function after the signing of the Armistice, but the activities incidental to providing for returned tuberculous soldiers will have to be continued for a number of years after all peace-time conditions have been resumed.

#### THE COOPERATING COMMITTEE ON THE TUBERCULOSIS WAR PROBLEM

Shortly after the United States engaged in the war and when reports were first being received as to the magnitude of the tuberculosis problem in the European nations, there was created at the suggestion of Colonel Frank Billings, later Chief of the Department of Reconstruction of the United States Army, a sub-committee of the State Council of Defense devoted to tuberculosis of which the Assistant Director of the State Department of Public Health was made chairman. This sub-committee was coordinated with the Division of Tuberculosis of the State Department of Public Health and with the Illinois Tuberculosis Association, the Assistant Director acting as chairman of the coordinated organization. This committee prepared and carried out a program to meet the tuberculosis war problem of which the following is an outline;

(1) Creation of sub-committees on the tuberculosis war problem in all of the counties of the State.

(2) The selection in each county of one physician designated as "County Medical Director," chosen either on account of his special skill and training in the early diagnosis of tuberculosis or his willingness to devote time and study to qualify himself on these subjects.

(3) The holding of clinical conferences at Springfield for the study of early diagnosis. These conferences brought together the best known experts on tuberculosis of the Mississippi Valley as a teaching staff and were attended by large numbers of physicians from all sections of the State. To a large extent, these conferences were responsible for the very unusual awakening of interest in tuberculosis noted during the past year among the medical men of Illinois.

(4) The establishment of local tuberculosis clinics as a part of the preparation for better and more adequate care of tuberculous soldiers and tuberculous persons in the civil population.

(5) Agitation of the question of establishing county tuberculosis sanatoria or emergency sanatoria or hospitals as required for the care of returned tuberculous soldiers.

(6) Personal contact with boards of supervisors or county commissioners to secure emergency appropriations for the care of returned tuberculous soldiers and for other war-time tuberculosis work.

The committee on the tuberculosis war problem rendered good service at a time when practically no other agency or agencies were attempting to operate. Even after the establishment of a cooperative relationship with the American Red Cross, for the specific purpose of caring for returned tuberculous soldiers, the local representatives of the committee continued to render excellent service and this service was continued until the governmental agencies such as the Bureau of War Risk Insurance and the United States Public Health Service, had assumed the major burden of the care of tuberculous persons of the army, navy, marine corps and nursing service.

The physicians who served as county medical directors later made up much of the personnel in aiding the Red Cross and Federal agencies in the care of returned tuberculous soldiers.

The local activity of these men has been responsible very largely for the development of many new tuberculosis clinics throughout Illinois and the influence of the cooperating committee has doubtless been very great in securing the establishment of forty tuberculosis sanatoria in Illinois within the past two years. Through the cooperating committee, considerable numbers of county boards made their first appropriations for the relief of the tuberculous, paving the way for a more humane, a more progressive, and a more generous attitude on the part of county authorities, now apparent with only a few unfortunate exceptions, throughout the entire State.

#### THE CARE OF RETURNED TUBERCULOUS SOLDIERS

At the beginning of the fiscal year, the War Department had advised the State Department of Public Health of the return of about 1,700 tuberculous soldiers to Illinois. This number was increased to something over 1,800 by the time the Armistice was signed, the number exceeding 2,000 at the time these pages are written, and still increasing through the groups of men who are now being discharged from army and navy tuberculosis hospitals and returned to their own communities. The number of tuberculous soldiers returned both before and after the signing of the Armistice, distributed by counties, is shown in an accompanying table (Table I).

The problem of the returned tuberculous soldier was encountered very early in our participation in the war. Many young men, who were doubtless tuberculous at the time of their acceptance into the service, broke down under the strain of their first training and returned to their

homes to find no organization or preparation to meet their needs. Illinois was singularly unfortunate in this respect, since there are no State sanatoria for the tuberculous, and but very few county, municipal and private institutions. In some unfortunate instances early in the war, returned tuberculous soldiers were neglected, and, at times, were compelled to seek aid from the overseers of the poor. In at least one instance, a returned tuberculous soldier was permitted to die in an almshouse.

TABLE I—RETURNED TUBERCULOUS SOLDIERS REPORTED BY COUNTIES SHOWING SOLDIERS RETURNED TO ILLINOIS PRIOR TO AND SUCCEEDING THE SIGNING OF THE ARMISTICE

County.	To Nov. 11, 1918.	From Nov. 11, 1918 to present time.	Total.	County.	To Nov. 11, 1918.	From Nov. 11, 1918 to present time.	Total.
Adams.....	16	1	17	Lee.....	3	2	5
Alexander.....	17	3	20	Livingston.....	3	4	7
Bond.....	3	1	4	Logan.....	4	8	12
Boone.....				McDonough.....	2	6	8
Brown.....	3	1	4	McHenry.....	5	3	8
Bureau.....	6	3	9	McLean.....	14	23	37
Calhoun.....	1	1	2	Macon.....	4	8	12
Carroll.....	5		5	Macoupin.....	15	5	20
Cass.....	7	3	10	Madison.....	33	7	40
Champaign.....	9	3	12	Marion.....	5	4	9
Christian.....	5	2	7	Marshall.....	2		2
Clark.....	10	2	12	Mason.....	1		1
Clay.....	7	3	10	Massac.....	9	1	10
Clinton.....	6	3	9	Menard.....	2	2	4
Coles.....	10	5	15	Mercer.....	5		5
Cook.....	40	13	53	Monroe.....	5		5
Chicago.....	666	211	877	Montgomery.....	11	2	13
Crawford.....	6	9	15	Morgan.....	2		2
Cumberland.....	2	1	3	Moultrie.....	1	1	2
DeKalb.....	4	2	6	Ogle.....	4	1	5
DeWitt.....	8	3	11	Peoria.....	22	10	32
Douglas.....	3	1	4	Perry.....	8	2	10
DuPage.....	7	4	11	Piatt.....	1	3	4
Edgar.....	9	3	12	Pike.....	1	3	4
Edwards.....	3		3	Pope.....	4	1	5
Effingham.....	9		9	Pulaski.....	3	3	6
Fayette.....	3	1	4	Putnam.....	1		1
Ford.....	2	1	3	Randolph.....	11	2	13
Franklin.....	16	5	21	Richland.....	3	1	4
Fulton.....	7	5	12	Rock Island.....	15	10	25
Gallatin.....	4		4	Saline.....	22	2	24
Greene.....	3		3	Sangamon.....	42	18	60
Grundy.....	6		6	Schuyler.....	3	1	4
Hamilton.....	5		5	Scott.....	1		1
Hancock.....	4	4	8	Shelby.....	8	4	12
Hardin.....	2		2	St. Clair.....	45	13	58
Henderson.....	2	2	4	Stark.....	1		1
Henry.....	4	4	8	Stephenson.....	6	2	8
Iroquois.....	3	1	4	Tazewell.....	7	2	9
Jackson.....	7	1	8	Union.....	8	3	11
Jasper.....	5	10	15	Vermilion.....	22	7	29
Jefferson.....	13	1	14	Wabash.....	4		4
Jersey.....	3	2	5	Warren.....		2	2
Jo Daviess.....	8	1	9	Washington.....	4	2	6
Johnson.....	7	1	8	Wayne.....	13	1	14
Kane.....	17	18	35	White.....	4	3	7
Kankakee.....	8	4	12	Whiteside.....	6	6	12
Kendall.....	4		4	Will.....	7	6	13
Knox.....	11	5	16	Williamson.....	27	7	34
Lake.....	8	2	10	Winnebago.....	19	7	26
LaSalle.....	11	6	17	Woodford.....	3	2	5
Lawrence.....	5	3	8	Total.....			2,043



Through its representatives, the cooperating committee on the tuberculosis war problem, much had been done for these young men. County boards had been induced to make special appropriations for them and considerable numbers of them had been examined by experts furnished by this Division and the Illinois Tuberculosis Association, and their treatment had been outlined. In many instances, medical and nursing care were furnished by the county medical directors of the cooperating committee and by the tuberculosis and other community nurses affiliated with the local tuberculosis organizations.

The number of returned tuberculous soldiers, however, increased rapidly and their proper care became one of the most important aspects of home service during the war. In fact, it is anticipated that the returned tuberculous soldier will be a responsibility of the Nation, State and community for a number of years to come and will perhaps constitute the last problem to be solved in physical reconstruction following the war. It has been pointed out that when a blind man has been taught to work without sight, he becomes constantly more proficient with each succeeding year; that the cripple, taught to work with an artificial limb, becomes more and more expert through practice; that the soldiers who have returned from the war, sick with ordinary ailments, will either die or recover within a reasonable period of time, but that the returned tuberculous soldier will remain subject to reactivation of disease for ten years to come. It consequently became apparent, early in the war, that some temporary provision for the care of these men be provided, but that ultimately their treatment should be taken over by some division of the Federal Government.

To meet the immediate and rapidly growing emergency, a contract was entered into between the State Department of Public Health, the Illinois Tuberculosis Association and the American Red Cross, whereby the Red Cross, through its local chapters, should make first contact with all returned tuberculous soldiers, ascertaining their general condition of health, general financial and social condition of the family, the attitude of the individual toward his disease and his desire or willingness to obtain institutional or medical treatment. This information was placed in the hands of the State Department of Public Health and the Illinois Tuberculosis Association, working jointly for the purpose of furnishing medical aid and institutional care. The Illinois Tuberculosis Association assumed the chief burden of this work. Nurses were placed in the field to overcome the prejudice in the minds of a great many individuals in regard to tuberculosis, and to bring these persons to central points where experts employed by the department and the association subjected them to thorough physical examination, and outlined the necessary treatment. The American Red Cross met the traveling expenses of returned soldiers to the central or examining points, and also assumed one-third of the cost of the institutional or other medical treatment recommended.

This working program was carried out rather effectively in most communities, but in certain sections it appeared difficult to impress upon the local Red Cross and Tuberculosis Association representatives the urgent necessity for institutional care early in the disease, and particularly to impress upon them that returned tuberculous soldiers should not be looked upon as objects of charity.

Within the past year, through an appropriation of several million dollars made by the Federal Congress, the United States Public Health Service working in conjunction with the Bureau of War Risk Insurance has assumed the financial responsibility for the institutional care of returned tuberculous soldiers, but the cooperative activities of the American Red Cross, the Illinois Tuberculosis Association and the State Department of Public Health have not been terminated, and in fact, have made much more effective the activities of the governmental agency.

The problems confronting the cooperating agencies in dealing with returned soldiers, did not consist merely in the examination of returned tuberculous soldiers and securing sanatorium provisions for them; in a great many instances, tuberculous soldiers stubbornly resisted all suggestions as to the nature of their disease, in some cases sacrificing their lives through this thoughtless attitude, while it was exceedingly difficult at times, even after institutional provisions had been made, to induce the sick or tuberculous patients to avail themselves of the opportunity of receiving institutional treatment or care. In fact, the provision for these men has been in large measure a campaign of education extending not only to the soldiers, but to the physicians and laymen of the State. It may be safely said that, had one-half of the medical profession and the educated laymen of Illinois attained a more intelligent attitude toward tuberculosis in the past, much human suffering would have been saved. On the other hand, our experience in dealing with about 2,000 tuberculous soldiers and approximately 10,000 draft rejects during the war, has opened our eyes to the magnitude of the tuberculosis problem, aroused interest among all classes of people, increased the support of anti-tuberculosis agencies and, what is perhaps more important, has caused the members of the medical profession to take a keener and more lively interest in the early diagnosis and treatment of this very serious, very evasive but entirely preventable and curable disease.

#### REACHING DRAFT REJECTS

The influence of the war is manifest in the increasing number of tuberculosis sanatoria and dispensaries established throughout the State, and in the very great increase of clinical meetings devoted to tuberculosis before county and local medical societies. In fact, these local dispensaries and clinical meetings have been of the utmost value in securing the thorough examination, not only of returned tuberculous soldiers, but of the thousands of young men rejected by the exemption boards on account of tuberculosis. In addition to the efforts made to

locate these draft rejects through correspondence and clinical meetings, the State Department of Public Health has attempted to reach all of these young men through correspondence, sending a letter to each, offering the services of the Division of Tuberculosis in securing examination or institutional care. Each of these rejects was also sent a copy of the circular on the "Cause, Prevention and Cure of Tuberculosis," issued by the State Department of Public Health, together with other helpful literature.

#### INCREASED SANATORIUM FACILITIES

At the beginning of the fiscal year, Illinois found herself better provided with public tuberculosis sanatoria than in the past, but still far behind other progressive states of the Nation in such provision. Municipal sanatoria were in operation in Chicago, Rockford and Rock Island, with a municipal institution at Peoria practically ready for operation. Cook County was the only county maintaining a tuberculosis sanatorium worthy of the name. A few other counties had small buildings or segregated quarters in connection with their almshouses, a provision which cannot be recommended under any circumstances in this day of a more intelligent and humane attitude toward tuberculosis and the victims of the disease.

Under the provisions of the excellent tuberculosis sanatorium law of 1915, LaSalle, McLean, Morgan and Adams Counties were engaged in the establishment of county sanatoria for the free accommodation of the rich and poor alike. Champaign, Livingston and Ogle Counties, which had adopted the sanatorium measure at the autumn election of 1916, were taking no active steps toward the completion of their institutions. Outside of the Chicago district, private sanatoria were in operation at Ottawa, Springfield and Collinsville. With all of these institutions in operation, the provision was hopelessly inadequate to house the normal enormous tuberculous population of the State, to say nothing of the tremendously increasing number of tuberculous persons needing sanatorium care which were brought to light through military service.

At the November election in 1918, the county tuberculosis sanatorium proposition was submitted to the voters in thirty-three counties. The Illinois Tuberculosis Association had set aside a considerable sum of money to finance the campaigns in these counties, and the Division of Tuberculosis assisted in the furthering of this project.

The result of the election stands as conclusive evidence of the increasing intelligence of the people of Illinois in their attitude toward this most wide-spread and devastating of diseases, and also of the compelling force arising from our experiences with tuberculosis during the war.

In the table here set forth, it will be seen that in every county in which it was submitted the proposition carried, in some instances with

as many as five or six votes in the affirmative to one negative vote. (Table II.) It is interesting also to observe that, while the women's vote was counted upon to put across the measure in many communities, the proposition would have been adopted in all of the thirty-three counties, even though the women had not voted at all.

TABLE II—ANALYSIS OF VOTE IN THIRTY-THREE ILLINOIS COUNTIES AT 1918 ELECTION ON TUBERCULOSIS SANATORIUM PROPOSITION

County.	1910 population.	Total vote cast for U. S. senator.	Total vote on sanatorium proposition.	Total vote for.	Total vote against.	Majority for.
Boone.....	15,481	1,845	2,652	1,551	1,101	450
Bureau.....	43,975	6,632	6,087	4,379	1,708	2,671
Christian.....	34,594	6,976	6,646	5,195	1,451	3,744
Clark.....	23,517	5,705	3,318	2,422	896	1,526
Clay.....	18,661	3,416	2,623	1,619	1,004	615
Coles.....	34,517	6,637	7,567	5,326	2,241	3,085
Crawford.....	26,281	4,841	3,656	2,756	900	1,856
DeKalb.....	33,457	5,119	4,498	3,898	600	3,298
DeWitt.....	18,906	3,993	2,835	2,210	625	1,585
Douglas.....	19,591	3,457	3,285	2,579	706	1,873
Fulton.....	49,549	8,099	4,771	3,871	900	2,971
Grundy.....	24,162	2,898	2,830	2,424	406	2,018
Henry.....	41,736	7,244	4,808	3,358	1,450	1,908
Jackson.....	35,143	6,459	5,183	3,857	1,326	2,531
Jefferson.....	29,111	5,382	2,508	1,615	893	722
Kane.....	91,862	18,478	12,181	10,567	1,614	8,953
Lee.....	27,750	5,015	5,668	4,177	1,491	2,686
Logan.....	30,216	5,090	5,519	4,614	905	3,709
McDonough.....	26,887	5,544	4,860	3,964	896	3,068
Macon.....	54,186	9,659	10,440	8,861	1,579	7,282
Madison.....	89,847	14,910	7,517	6,275	1,242	5,033
Marion.....	35,034	5,908	6,324	3,739	2,585	1,154
Piatt.....	16,376	2,813	3,061	2,541	520	2,021
Pike.....	28,622	5,223	5,480	4,264	1,216	3,048
Randolph.....	29,120	5,329	4,149	2,973	1,176	1,797
Scott.....	10,067	2,254	1,560	947	613	334
Stephenson.....	36,821	6,771	6,137	4,559	1,578	2,981
Tazewell.....	34,027	6,351	6,007	4,798	1,209	3,589
Vermilion.....	77,996	13,021	12,732	10,227	2,505	7,722
Whiteside.....	34,507	5,718	4,790	4,029	761	3,268
Will.....	84,371	13,234	10,221	8,666	1,555	7,111
Winnebago.....	63,153	9,175	8,077	6,977	1,100	5,877
Woodford.....	20,506	3,573	3,645	2,184	1,461	723
Total.....		216,769	181,635	141,422	40,213	101,209

During the past year the LaSalle County Sanatorium and the McLean County Sanatorium have been opened, while the Adams County and the Morgan County institutions are being pushed to completion.

Plans have also been made for a number of county sanatoria for which funds have been pledged for appropriation at the annual meetings of boards of supervisors and county commissioners in September, 1919.

The establishment of this large number of county tuberculosis sanatoria—forty institutions in a period of less than three years—a larger number of institutions than have ever been established in any state in the Union in a like period of time, have imposed upon the Division of Tuberculosis unusual and arduous duties and grave responsibilities. The tuberculosis sanatorium is a technical institution of distinctly specialized character, the diagnosis and treatment of tuberculosis



constituting a specialty as distinctive as operative surgery. In the very nature of things, the local sanatorium trustees were not informed as to the difficult problems imposed upon them and it has been the duty of this Division of Tuberculosis, working in close conjunction with the Illinois Tuberculosis Association, to advise the sanatorium trustees on the selection of sites, on architectural plans, on their medical and nursing personnel and organization, and on the establishment of free tuberculosis dispensaries and visiting nurse service. In rendering this service, the division has called freely upon the Division of Sanitation for advice as to drainage, water supplies and sewage disposal, and upon other divisions for such technical service as they are designed to render.

During the coming year, the division will be engaged considerably in the guidance of sanatorium trustees and in advising in the construction, maintenance and operation of public institutions. With only a few of the county sanatoria completed, or approaching completion, a number of very grave problems have already arisen, which, if not wisely solved, will jeopardize the success of the entire Illinois county sanatorium system. These faults are largely due to the failure on the part of sanatorium trustees to realize that sanatorium architecture is very different from any other form of hospital architecture and requires specialized skill and experience, and to the failure on the part of the trustees to appreciate that a high degree of specialized training and skill is more important for a successful sanatorium than is ideal architecture, construction or equipment.

As a means of obtaining some degree of uniformity in the forty county institutions already established and in the fifty or sixty more, which will doubtless be completed within the next few years, the Division of Tuberculosis contemplates during the next year the inspection and grading of existing sanatoria along much the same line as is employed in the scoring of dairies, with the idea of pointing out to the institutional trustees the standards of construction and management generally recognized as essential to efficient and successful operation.

Even after overwhelming affirmative vote on the part of the people, considerable difficulty has been encountered in securing the prompt establishment of county sanatoria, on account of the reluctance of boards of supervisors or county commissioners to carry out the will of the people, these officials apparently feeling that, in spite of the public expression at the polls, it is still discretionary with them as to whether or not they shall act. This reluctance or unwillingness has been the more difficult to overcome on account of a number of legal questions which have been raised in the application of the law.

#### EDUCATIONAL WORK AMONG PHYSICIANS

Perhaps the most important work of the Division of Tuberculosis, in cooperation with the Illinois Tuberculosis Association, during the

past year has been the educational program made possible through the receptive attitude of the physicians of the State, and particularly by the county medical societies. Certainly one of the most important results of our participation in the war, as it affects the tuberculosis campaign, has been the awakening of the medical profession to the tremendous increase of tuberculosis among the public at large and to the general magnitude of the tuberculosis program.

The distribution of approximately 12,000 young men in the prime of life into the one hundred and two counties of Illinois, labeled by exemption boards and army examiners as victims of tuberculosis, served to impress upon the people for the first time, the magnitude of the tuberculosis problem, and the findings which would doubtless be made if the entire population were subjected to periodical physical examination, and, in their efforts to gain contact with all of these young men, the clinicians and nurses of the State Department of Public Health and the Illinois Tuberculosis Association have had an opportunity to discuss with a large proportion of the medical profession the tuberculosis problem of the civil population.

During the past year, clinical meetings have been held in various sections of the State, usually under the auspices of other medical societies, and numbering about twenty each month. The Illinois Tuberculosis Association has employed full-time experienced clinicians whose work has been supplemented by the Chief of the Division of Tuberculosis and by the part-time services of several physicians specializing in tuberculosis and men of national reputation.

One of the most significant incidents of the year and of the entire warfare against tuberculosis, has been the fact that in many instances these clinical meetings on tuberculosis, at times called for the purpose of examining returned soldiers and discharged exemption board registrants, have been the largest meetings of the year of the various county medical societies.

A large number of permanent tuberculosis dispensaries have been established during the past fiscal year, and, inasmuch as the free dispensary is an essential part of the county tuberculosis sanatorium under the Illinois law, it is believed that Illinois will soon have a free tuberculosis dispensary system which will extend generally throughout the State.

#### TUBERCULOSIS AND COMMUNITY NURSES

On account of the extreme shortage of community nurses during the period of the war, the State Department of Public Health, in conjunction with the Illinois Tuberculosis Association, organized and conducted a short emergency course in community nursing in Springfield. While this course was exceedingly successful, the number of registrants was small, and it became obvious that the shortage of nurses was not

confined to public health nurses, but was so general as to make this method of meeting the problem relatively ineffective.

During the past year, the shortage of nurses has been only moderately relieved. While a large number of women have been released from Red Cross and military service the tremendous expansion of community nursing throughout the Nation has readily absorbed them. In as many as sixty communities in Illinois funds were found available for the employment of nurses with no candidates to be secured. On account of this condition, a considerable number of women who were graduates of training schools, but who had had no medical social experience, were placed in responsible positions with the natural result that, while a few attained striking success, a great many fell short of the desired end, indicating clearly the necessity of special training of nurses who desire to engage in public health work.

At the present time the nursing situation in Illinois, as it is throughout the Nation, is extremely unstable and chaotic. With a very limited number of adequately trained women even to meet the requirements of institutions and of necessary bedside nursing, the demand for public health nurses and community nurses has become very large. The American Red Cross, on terminating its war-time program, has in contemplation a peace-time program consisting of health centers and community nursing, with special accent upon child welfare and tuberculosis. In the meantime, the activities of Childrens' Year, to which reference is made in the report of the Division of Child Hygiene and Public Health Nursing, have tremendously increased the demand for child welfare and school nurses, and have presented for our consideration a new conception of health work among infants and school children.

In spite of the fact that increased appropriations by the Fifty-first General Assembly have made possible the development of the Division of Child Hygiene and Public Health Nursing to such an extent that there will be employed in the future a sufficient supervisory personnel to guide the nursing activities of the State, the Division of Tuberculosis is naturally tremendously concerned as to the future. It has been stated, and perhaps authoritatively, that about ninety per cent of the community nursing services in the middle west have been created in whole or in part by funds derived from the sale of Red Cross Christmas Seals, or from other funds which may be designated as "tuberculosis funds." These so-called "tuberculosis funds" are increasing yearly, being trebled in 1917 as compared with the previous year, and the wise expenditure of these funds will require a largely augmented corps of women capable of carrying instruction as to the prevention and cure of tuberculosis into the homes of tuberculous persons in the State. If the Red Cross peace-time program is carried out as projected, if requests for nursing services continue to increase in number as they have in the past, it is perfectly obvious that, when the forty Illinois county sanatoria have

been supplied with their institutional nurses and the nurses requisite to the development of their dispensaries and visiting nurse service, it will be practically impossible to recruit sufficient nurses for the expansion of tuberculosis work and other public health activities. On this account, the Division of Tuberculosis, in conjunction with the Illinois Tuberculosis Association, and with the advice of the Division of Child Hygiene and Public Health Nursing, is studying carefully the system worked out in Wisconsin for the special training of so-called "public health instructors" to perform certain limited functions of health education not requiring special nursing training, but to which a considerable number of public health nurses of the State are now devoting much of their time. It is obvious that some such plan must be worked out during the coming year in Illinois.

#### TUBERCULOSIS SURVEYS

In spite of definitely established relationship between the tuberculosis mortality and tuberculosis morbidity through which each county or community may determine with relative accuracy the extent of its tuberculosis problem, it appears to be necessary to impress upon each community that it is in no wise an exception to the rule, and on this account, it has been a part of the duty of the Division of Tuberculosis, during the past year, to recommend and to assist in the carrying out of tuberculosis surveys in practically all of the counties in which appropriations were desired for the establishment of sanatoria with attendant dispensary and nursing service and in all of those counties acting favorably upon the county tuberculosis sanatorium proposition.

A careful analysis of the results of these surveys, carried out in the most painstaking manner by representatives of the Illinois Tuberculosis Association, reveals some interesting facts. First, it is clear that, with the attitude prevailing toward tuberculosis on the part of the medical profession and the general public in Illinois at the present time, it is impossible to determine the extent of tuberculosis through an ordinary tuberculosis survey. In those communities, however, in which the survey has been followed by the establishment of tuberculosis dispensaries, under the supervision of men competent to diagnose the disease in its early stages, and the establishment of permanent visiting nursing service, it has been shown that the tuberculosis surveys of the present day are productive of interesting information of what might be termed the "negative sort," that is, that an exhaustive tuberculosis survey, made up largely of a house to house canvass and inquiries made of the medical profession, will *not* show the real prevalence of tuberculosis in the community. Such a survey will demonstrate the need of extensive and permanent anti-tuberculosis activity.

It has been established in the experimental work at Framingham, Massachusetts, in which the National Tuberculosis Association is super-



vising the expenditure of a sum of \$200,000 to study the tuberculosis problem of a community of 16,000 population, that there are approximately twenty active and quiescent cases of tuberculosis to each death from the disease. In the large number of tuberculosis surveys made throughout Illinois during the past year, the following significant facts have been enlisted:

(1) In the average community, the number of cases reported under the rules and regulations of the State Department of Public Health is smaller than the number of deaths from tuberculosis, when, as a matter of fact, the number of reported cases should be from ten to twenty times as large as the number of deaths.

(2) There is still a tendency on the part of physicians to withhold the diagnosis of tuberculosis from the patient, although it is generally recognized that it is only through an appreciation of the true nature of the disease that the patient may hope for recovery.

(3) In spite of the campaigns of education which have been carried out through the past ten years, there appears still to exist a conspiracy of silence in which both patients and physicians participate to avoid the true diagnosis of tuberculous cases.

(4) In spite of this campaign of education, it is obvious that a large number of persons suffering from pulmonary tuberculosis, whether so diagnosed or not diagnosed, are relying upon worthless patent medicines for their cure.

(5) It is obvious that certain physicians throughout the State still regard it as optional with themselves as to whether or not they shall obey the rules and regulations of the State Department of Public Health relative to the reporting of pulmonary tuberculosis.

As a matter of fact, tuberculosis surveys made for the purpose of demonstrating that any county in the State of Illinois is in need of constructive tuberculosis work and is confined with a large tuberculosis problem, are wholly unnecessary, these facts having been demonstrated over and over again.

Nevertheless there has been a tremendous practical advantage derived from these surveys. It has seemed to be necessary to demonstrate to county boards of supervisors and other public officials, and to the public at large, that the tuberculosis problem is existent in large proportions among their own friends and associates, to induce them to take advantage of the opportunity afforded by the Illinois laws to meet their tuberculosis problem.

#### SUGGESTED PROGRAM FOR THE COMING YEAR

On account of the very great increase of tuberculosis activity throughout Illinois, it seems advisable during the coming year for the Division of Tuberculosis to devote itself very largely to the guidance of public officials in meeting their tuberculosis problems, in enforcing the rules and regulations for the control of tuberculosis, in inspecting and

standardizing public tuberculosis sanatoria, in meeting the needs of school authorities and counties requiring official diagnoses, and in otherwise performing essentially public functions in regard to the disease, at the same time continuing the educational program which has been responsible for much of the success in the past. To do this it will be necessary to work on an intimately cooperative basis with the Illinois Tuberculosis Association in dealing with the general tuberculosis problem, and with the American Red Cross and other agencies interested in public health nursing, to secure a proper alignment of tuberculosis nursing in a general nursing program, under the supervision of the Division of Child Hygiene and Public Health Nursing.

Such a program will mean the extension of clinical meetings and further attempts to interest the medical profession in tuberculosis work; the assistance of the county sanatorium trustees in the details of their activities, and a closer contact with local health authorities for the enforcement of official regulations. This plan must necessarily leave to the Illinois Tuberculosis Association in large measure, the tremendous public health activities among school children represented in the Modern Health Crusaders, although, under conditions existing in Illinois, the division will not lose touch upon these important activities.

The work in connection with the returned tuberculous soldiers must be continued or even expanded, and in that connection close cooperation will be retained with the American Red Cross, the United States Public Health Service and the Bureau of War Risk Insurance.

## DIVISION OF SANITATION

PAUL HANSEN, *Chief Sanitary Engineer*

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The activities of the Division of Sanitation of the State Department of Public Health during the fiscal year, from July 1, 1918, to June 30, 1919, may be classified under the following general headings:

- (1) Special war work.
- (2) Investigation and approval of public water supply projects.
- (3) Investigation and approval of public sewerage projects in cooperation with the Division of Waterways of the State Department of Public Works and Buildings.
- (4) Investigation of stream pollution in cooperation with the Division of Waterways of the State Department of Public Works and Buildings.
- (5) Certification of drinking water supplies for use on common carriers in cooperation with the United States Public Health Service.
- (6) Periodic inspections and analyses of existing water supplies with special reference to their sanitary quality.
- (7) Periodic examination and tests of water-purification and sewage treatment works.
- (8) Examination and approval of proposed municipal plumbing ordinances as required under the State plumbing law.
- (9) Cooperation in making sanitary surveys of municipalities with special reference to (a) water supply, (b) sewerage, (c) street cleaning, (d) city wastes collection and (e) mosquito extermination.
- (10) Nuisance investigations.
- (11) Epidemiological investigations in connection with typhoid fever, enteritis and other diseases that may be water-borne.
- (12) Investigations of proposed sites for tuberculosis sanatoria with special reference to water supply, sewage disposal and drainage as a basis for approval of such sites as required under the State law.
- (13) Investigation of sanitary condition of school buildings at request of county superintendents of public instruction as required by the State law.
- (14) Investigation of methods for the purification of industrial wastes and sewages.
- (15) Sanitation of common carriers and construction camps.
- (16) Housing and industrial sanitation.

- (17) Laboratory service.
- (18) Inspection of summer resorts.
- (19) Control of public swimming pools and bathing beaches.
- (20) State House drinking water supply.
- (21) Educational work including publications, addresses and exhibits.

#### PERSONNEL OF THE DIVISION

The personnel of the Division of Sanitation during the fiscal year of July 1, 1918, to June 30, 1919, comprised but four engineers, one analyst, two stenographers, one laboratory helper and one man for distributing drinking water about the State House. This personnel proved wholly inadequate to carry out the functions enumerated above, although the division has been obliged to do some work in connection with all of these activities at one time or another. During the same period, the work was still further handicapped by the absence of three of the division's employees in military service. The situation at the end of the fiscal year was somewhat improved by new appropriations which permitted the employment of two additional engineers, one additional analyst and one additional stenographer. The work cannot be adequately handled, however, unless the personnel of the division is greatly increased.

To indicate more clearly the character of the work done by the division, brief comment will be made on the activities under each of the functional heads enumerated above and in the order given:

(1) *War Work.*—Special war work of the division continued until the early part of 1919. It comprised making careful sanitary surveys within the sanitary zones established about military camps and cantonments. Special attention was also given to water supply, sewerage and sewage disposal at the various military establishments in the State. While these utilities were under military management, nevertheless it was necessary to see that this management adequately protected the health interests of the State and, moreover, the department was frequently able to extend valuable assistance to the military authorities in the matter of technical advice and laboratory service.

(2) *Water-Supply Projects.*—The State Department of Public Health recognizes the fact that a polluted public water supply is of very great danger to the public health as evidenced by numerous epidemics and, not only does a polluted water supply affect the health of the community which it serves, but also affects the health of the people of the State in general, for the reason that, with modern means of transportation, a transmissible disease occurring in one locality is rapidly carried to other localities.

It is much easier to anticipate and avoid sanitary defects in public water supplies than to correct such defects after they exist. To this end, the division gives special attention to water-supply projects, in conformity with rules and regulations of the department, which require the department's written approval of plans and specifications for proposed



new or additional water supplies prior to the awarding of contracts. This activity not only prevents the installation of defective works, but has proved of great value and assistance to communities concerned because the division has accumulated a fund of knowledge relating to water-supply resources and methods of handling and treating water supplies for purification purposes that is always placed at the disposal of the local authorities and the engineers engaged by them.

Because of high prices incident to the war, and the restrictions placed upon construction, there has been little activity on the part of municipalities in establishing new and additional water supplies. However, shortly after the termination of the fiscal year the necessity for new or additional water supplies had become so acute that new developments became necessary almost regardless of cost. During the fiscal year, investigations with reference to proposed water supplies were made at Decatur, Jacksonville, Vandalia, Christopher, Newton and Marion.

(3) *Sewerage Projects*.—The same reasoning that makes it desirable to review plans for water supply projects, applies in the case of sewerage projects, though the danger of epidemic due to defective sewerage is not as great as the danger due to a public water supply of inferior quality. The main consideration in dealing with projects for sewerage is to make sure that the system is properly designed to adequately serve the community and that adequate provision has been made for the final inoffensive disposal of the sewage, due cognizance being taken of future requirements in each instance.

The work of reviewing plans for sewerage projects is more or less allied with the functions of the Waterways Division of the Department of Public Works and Buildings, as a permit from this division is required whenever a structure is built into one of the streams of the State and the division also has certain powers with reference to the pollution of streams. Cooperation is secured and duplication of work prevented by having the Division of Sanitation of the State Department of Public Health make all investigations and by placing the results of such investigations before the Waterways Division as a basis for taking any action that may fall within the duties of that division. This, incidentally, is but one of the hundreds of instances of governmental economy and efficiency brought about through the Civil Administrative Code.

As in the case of water-supply projects, there was very little activity in connection with sewerage projects during the fiscal year. At the termination of the fiscal year, however, many new projects and additions to existing sewerage systems were under consideration. Investigations with reference to proposed new sewerage or additional sewerage were made at the following places: Aurora, Barry, Bloomington, Carlinville, Chicago Heights, Downers Grove, Fairbury, Galena, Gillespie, Grayslake, Lstant, Mason City, Mendota, Mount Olive, Ponemah, Rockford,

Roselle, Streator and Wheaton. Formal approval for new work was granted in the case of Wheaton.

(4) *Stream Pollution*.—There are numerous cases of stream pollution by sewage and industrial wastes in the State of Illinois and the Division of Waterways of the Department of Public Works and Buildings has been active in attempting to secure an abatement of such pollutions by means of the authority vested in that division with reference to the pollution of streams. Because of the laboratory equipment and the technical personnel of the Division of Sanitation, this division is called upon to make the investigations upon which the Division of Waterways bases its action. Sometimes these investigations are initiated by the Division of Sanitation. Stream pollution investigations were made at the following places: Benton, East St. Louis (Cahokia Creek), Georgetown (Ellis Creek) and Waukegan, and orders have been issued against East St. Louis and Waukegan.

(5) *Certification of Drinking-Water Supplies used on Common Carriers*.—During the latter part of 1918, a cooperative arrangement was perfected between the Illinois State Department of Public Health and the United States Public Health Service whereby the State Department of Health makes analyses and inspects the sources, and methods, of handling of drinking-water used on interstate carriers and whereby these supplies are either certified or condemned by the United States Public Health Service on recommendation of the Illinois State Department of Public Health. While the cooperative work relates to *interstate* carriers, the work of the division has been extended to cover *intrastate* carriers as well.

The arrangement requires that each point in the State where trains are watered must be inspected once every twelve months to ascertain if there is a possibility of contamination of the supply and a laboratory analysis must be made every six months. The work did not get fairly under way until the spring of 1919 upon the return of the regular analyst from military service. Up to the end of the fiscal year 86 watering points had been inspected and 370 samples had been analyzed. The volume of this work rapidly increased following the termination of the fiscal year so that, at the present writing, all supplies have been analyzed and all but a very few watering points have been inspected. This work has generally met with complete cooperation on the part of railroad officials and very often the advice given by the State Department of Health has been of very material assistance both by way of securing better results and in reducing expenses.

The work done in connection with certification of drinking water supplies for common carriers has been effectively coordinated with inspections of public water supplies which in a large percentage of the cases are utilized by the railroads.

(6) *Examination of Water Supplies.*—The division has gathered descriptive matter relating to all of the 433 public water supplies in the State and, therefore, has a good knowledge of the relative safety of the various supplies. An effort is made to inspect all the public water supplies in the State from time to time, but those supplies known to be of good quality and amply protected against the possibility of contamination are visited very infrequently and special attention is given to those supplies which are known to be polluted or which are under suspicion of becoming polluted.

Local authorities are urged to remedy any defects that may be found, but unfortunately the advice of the division is frequently not complied with, even when the expense involved may be but trifling. In view of the fact that a water supply may be rendered at least safe, (if not entirely acceptable as to its physical characteristics) by the application of a sterilizing agent such as liquid chlorine or hypochlorite of calcium, at an expense that is negligible, (rarely amounting to more than ten cents per capita per annum) it has become increasingly apparent that the State Department of Public Health is warranted in adopting a regulation prohibiting the furnishing of a public water supply of unsafe quality.

During the fiscal year 49 existing water supplies were inspected.

(7) *Water-Purification and Sewage-Treatment Plants.*—A constantly increasing number of water-purification and sewage-treatment plants are being installed in the State of Illinois. At the present time there are 38 water-purification plants and 73 sewage-treatment plants. Unless these plants are properly operated, they will fail to perform their function in a manner that will adequately protect the public health in the case of water-purification plants and prevent nuisance and undue stream pollution in the case of sewage-treatment plants.

Unfortunately there is a strong tendency to neglect the operation of these works, especially in the smaller communities. The tendency toward neglect is much more marked in the case of sewage-treatment plants than it is in the case of water-purification plants. This is explainable by the fact that a community derives direct benefit from a water-purification plant, whereas the benefit from a sewage-treatment plant more usually accrues to the advantage of riparian owners in a down-stream direction. In view of these conditions, the Division of Engineering and Sanitation has found it necessary to make periodic inspections and sometimes thorough tests on water-purification and sewage-treatment plants throughout the State, but limited personnel has very seriously handicapped this work. Nevertheless, some results are being accomplished.

In attempting to correct defective operation, special emphasis is placed upon the necessity of employing competent operators on a permanent basis. It is recognized that it is not always possible to obtain

skilled operators in the smaller communities and in such cases the division undertakes to instruct the operators. This is a burden which the State should not bear, as it involves a great expenditure of time and an inequitable expenditure of funds when the work is carried out thoroughly. Therefore, smaller municipalities are urged to retain the services of competent engineers to supervise the operation of their plants by periodic inspections and the analyses of operating records. Little has been accomplished along this line and the division has been under the necessity, in order to protect public rights and public health, to give as much supervision to water-purification and sewage-treatment as its limited means and personnel will permit. Water-purification and sewage-treatment plants visited during the fiscal year are tabulated below:

Water-purification plants	Sewage-treatment plants
Aurora—application of sterilizing agent.	Antioch.
Carbondale—application of sterilizing agent.	Brookfield.
Centralia—application of sterilizing agent.	Bushnell.
Chicago—application of sterilizing agent.	Chicago Heights.
Waukegan—application of sterilizing agent.	DesPlaines.
Harrisburg—filtration and sterilization.	Downers Grove.
Pana—filtration and sterilization.	Glen Ellyn.
Rock Island—filtration and sterilization.	LaGrange.
Streator—filtration and sterilization.	Naperville.
Warsaw—filtration and sterilization.	Pana.
	Pontiac.
	Ponemah.
	Roselle.
	Scott Field.
	Wheaton.

Since the termination of the fiscal year, more frequent visits were found possible.

(8) *Examination and Approval of Proposed Municipal Plumbing Ordinances.*—The State law requires that municipalities having a water supply or sewerage system must adopt a plumbing code with the advice of the State Department of Health. Under this law, a number of communities have requested the assistance of the Division of Sanitation. During the preceding year, much study was given to the preparation of a suggested ordinance and such an ordinance was finally compiled from ordinances in use elsewhere. The suggested ordinance, now being sent out, is not entirely satisfactory and needs further study and revision.

The division should be in a position to do this work in a more constructive manner and not rely solely upon the ordinances that have been developed elsewhere. To this end, the department should be given the services of at least one employee who can specialize in the subject of plumbing and be authorized, when necessary, to make special investigations of an experimental nature or otherwise to give the division a firm basis for its recommendations. Moreover, the division should not await requests for advice, but should actively undertake to see that all municipalities comply with the law. This is practically impossible with present personnel. During the fiscal year about twenty cities were advised with reference to the preparation of plumbing ordinances.

(9) *Sanitary Surveys.*—The Division of Sanitation has, from time to time, been called upon to assist the Division of Surveys and Rural Hygiene of the State Department of Public Health in making sanitary surveys. This work comprises a careful study of the local water supply, sewerage system and the organization and equipment for



cleaning streets and collecting and disposing of city wastes such as garbage, ashes and rubbish. Attention is also given to mosquito eradication by the drainage of any nearby mosquito breeding places.

The reports prepared as a basis of these studies embody constructive recommendations of a preliminary character for improvement of existing conditions where improvement is deemed desirable. It is not practicable, however, for the division to undertake the preparation of plans and specifications to serve as a basis for carrying out recommended improvements, but an attempt is made to guide the municipality in a general way in obtaining special engineering assistance.

Cooperative work on sanitary surveys was done at the following places during the fiscal year: Alton, East St. Louis, Freeport and Rockford.

(10) *Nuisance Complaints.*—In the course of the year, (especially during the summer season) large numbers of complaints relative to nuisances are received. The following tabulation indicates the number of nuisances and the causes thereof, for the fiscal year:

## CLASSIFIED NUISANCE COMPLAINTS

Alleged cause of nuisance	Number of complaints.	Alleged cause of nuisance.	Number of complaints.
Privies.....	20	Stock pens.....	2
Slaughter houses.....	1	Garbage and filth.....	8
Hog pens.....	12	Stream pollution.....	2
Stagnant water.....	5	Insanitary hotel.....	1
Defective drainage and sewerage.....	21	Open sewer.....	1
Rendering works.....	3	Insufficient heat in building.....	1
Creamery wastes.....	3	Dust from race track.....	1
Fumes from factories.....	4	Pollution of wells.....	5
Insanitary meat market.....	1	Unsatisfactory water supply.....	1
Dumping grounds.....	1	Poultry.....	2
Manure pile at chicken yards.....	1	Manure.....	1
Insanitary schools.....	4	Cheese factory wastes.....	1
Rats and rotten eggs.....	1	Refuse disposal.....	2
Carcass of horses and other animals.....	3	Insanitary dump.....	1
Hogs, cows and horses.....	2	Cesspools.....	5
Insanitary theatre.....	1	Cellar.....	1
Coal mine.....	2	Weeds.....	2
Barn.....	2	Insanitary bathing beach.....	1
Insanitary railroad yards.....	1	Sewage disposal from sanatoria.....	1
General insanitary conditions.....	12	Pollution of ditch.....	1
Insanitary restaurant.....	1	Insanitary condition at cattle pass.....	1
Stable.....	1	Canning factory wastes.....	1
Wastes from saloon.....	1	Dairy stable.....	1
Fertilizer on truck patch.....	1	Fecal matter.....	1
		Total.....	149

The number of nuisance complaints has been constantly increasing and was especially large during the past summer so that the figures given above do not represent the amount of this business that is now being handled. It is, of course, impracticable and would be inadvisable from the taxpayers' point of view for the State Department of Health to make inspections of nuisances because this would be very time-consuming and involve a large amount of travel and expense in connection

with matters that affect but a few persons. On the other hand, it is deemed desirable to give all these complaints as much attention as is possible through correspondence.

The custom has been formed of sending letters to the complainants indicating that the laws provide adequately for the abatement of nuisances by local authorities and informing them that if no relief is available locally, they may obtain nuisance abatements under the State law. At the same time, a communication is written to the local health authorities advising them of the complaint, pointing out their duties in connection with the matter and directing them to make an investigation, to take suitable action and to report the results to the State Department of Public Health. In about fifty per cent of the cases it is found that this procedure gets results and in the other fifty per cent it is found that the complaints are either without basis, due to neighborhood quarrels or, (perhaps most frequently) that the local authorities have no conception of municipal sanitation.

Experience with nuisance complaints emphasizes very strongly the need of more centralized control of health activities such as has been recently adopted in Ohio. This does not mean any infringement on local self-government, inasmuch as the local authorities will still have the right to adopt health ordinances within the rather broad limitations at present prescribed by health law, but the object would be to obtain a more thorough and constant application and enforcement of these ordinances by competent officials.

Occasionally there comes to the attention of the division a public nuisance of a very pronounced character concerning which the local authorities desire expert knowledge for their guidance in dealing with the situation. In such cases, investigations are made as thoroughly as existing means permit and a carefully prepared report is submitted to the local authorities. During the fiscal year, twenty-three nuisance inspections were made relating to such subjects as: unsatisfactory sewage disposal; poor drainage; troublesome cesspools; garbage disposal; large poultry houses, etc.

(11) *Epidemics*.—From time to time, epidemics of typhoid fever and other diseases that may be water-borne, occur within the State and whenever suspicion is directed to the public water supply or to any insanitary conditions that are covered by the activities of the division, an epidemiological investigation is made to ascertain the cause of the outbreak. During the fiscal year, investigations of epidemics at the following places were made: Moline (typhoid fever); Geneva (dysentery); Joliet (typhoid fever); Mattoon (typhoid fever); Mt. Carmel (typhoid fever); Peoria (dysentery).

Epidemiological studies are always thorough and include obtaining carefully prepared histories of cases and a painstaking examination of the public water supply or any other agency that may be suspected of contributing the disease. The results of these investigations are em-

bodied in complete reports containing definite recommendations for the correction of such conditions as were responsible for the disease and also the correction of such other conditions as may cause future epidemics of a similar nature.

(12) *Tuberculosis Sanatoria*.—The State law authorizing the establishment of county tuberculosis sanatoria requires that the approval of the State Department of Public Health be obtained for general plans for buildings. As the selection of the site must be governed very largely by practicability of collecting and disposing of sewage at relatively small expense and good drainage, the division is called upon to assist county boards in determining upon suitable sites. After the site has been selected, the division is again called upon for advice in connection with the development of a water supply and methods for inoffensively disposing of sewage. From time to time the division also furnishes certain technical information regarding building construction.

(13) *School Inspections*.—The State law provides that, when a request is made by the county superintendent of public instruction, the State Department of Health must investigate the sanitary condition of school buildings. During the fiscal year, inspections of 18 schools were made and requests for such inspection are constantly increasing in number. When an inspection is made, a report is prepared giving a very full description of the school building and school premises, pointing out the defective conditions from a sanitary point of view and giving constructive information as to how the various defects can be corrected. These reports are sent to the county superintendent of public instruction for his information and a copy of each report is also sent to the State Superintendent of Public Instruction.

The investigations deal with such items as location of schools, with reference to accessibility by the school children, character of school site with reference to size and drainage, construction of school building, lighting, heating, ventilation, toilet facilities, drinking water, school furniture, interior decorations with reference to suitable colors, etc.

The results obtained through work done by the division in connection with school sanitation are not satisfactory, inasmuch as, with present personnel, it is possible to visit only those schools that are brought to the attention of the division, either because their sanitary condition is intolerably bad or because, as most frequently happens, enlightened local school authorities desire to have advice that will guide them in providing the best sanitary conditions. The great majority of moderately insanitary school buildings are rarely referred to the division.

If the work of school sanitation is to be supervised by State authorities, it should be done on a much more comprehensive and thorough basis. A sufficient number of competent inspectors should be provided to cover, within reasonable time, all the school buildings in the State, and a law should be enacted which will require the approval of the State Department of Health with reference to the sanitary features of all new

buildings. In this way, it would be possible to constructively improve school sanitation throughout the State and to obtain a greater uniformity of practice.

(14) *Treatment of Industrial Wastes and Sewages.*—The State Department of Public Health is frequently appealed to for advice with reference to methods of treating industrial wastes and sewages. There is a great variety of industries that produce liquid wastes of a putrescible character which, if discharged into small streams and water courses, produce foul odors. In most instances, the industries are so small that they do not have the means to study their own problems to find an adequate solution. It seems, therefore, to be a proper function of the State Department of Public Health, as a means for encouraging and protecting the industries of the State, to carry on such investigational and experimental work with reference to the treatment of these wastes as the organization and facilities of the division will permit.

During the fiscal year, the department received numerous requests for information regarding the handling of industrial wastes. The most frequent requests for information were in connection with the treatment of wastes from creameries of which there are a very large number scattered throughout the State. Unfortunately, this is a very difficult waste to handle by methods that have already been developed for satisfactorily treating domestic sewage and, though considerable experimental work has been done by the United States Public Health Service and other State departments of health on the creamery and cheese factory waste problem, it cannot be said that an adequate solution has been found. The Division of Sanitation is, however, sometimes able to devise an adequate solution for individual cases where local conditions favor the adoption of a partial purification of the wastes, but there is obviously need for further study.

Work on the study of the treatment of sewage and industrial wastes may be increased in volume, as the division and its facilities are enlarged, because it can be conducted as a by-product—so to speak—of the other work of the division, utilizing as it does laboratory facilities and personnel when not engaged in other work of a more pressing character. It is also found that a portion of the cost of this work is willingly borne by the industries affected, which may properly provide the experimental treatment devices that may be required.

(15) *Sanitation of Common Carriers and Construction Camps.*—Because of the pressure of other work, it has been practically impossible to do any work in connection with sanitation of common carriers and construction camps other than to carry on some correspondence relating to these subjects. As the sanitation of common carriers cannot be handled by any local health agency, it logically devolves upon the State Department of Health to handle this field. It should be possible at an early date to make a thorough study of all factors that enter into the sanitation of common carriers other than drinking water, (the certi-



fication of which is handled as a separate activity as already described) and to devise rules and regulations governing these matters. The items that require most attention relate to the cleansing, disinfection and ventilation of passenger cars and toilet facilities, both in stations and on cars. The steam roads, while in no wise perfect, have done much to improve sanitation of their own volition, but the interurban electric railways are exceedingly backward in the matter of sanitation and should be given early attention.

(16) *Housing and Industrial Sanitation.*—These are items that affect a very large number of people of the State and, though they are primarily sociological questions, nevertheless, they are so intimately related to problems of sanitation that they must necessarily command the attention of the State Department of Public Health. To date, appropriations have not permitted the division to give much attention to these subjects, excepting in a very general way. In a few instances, the division has been called upon by the State Factory Inspector in connection with sanitary problems that have come to his attention. It would seem desirable to develop a subdivision that would give very complete and careful study to the whole subject of housing and industrial conditions with reference to hygiene and sanitation. This work should, of course, be coordinated with the work of the Division of Factory Inspection of the State Department of Labor, so that there will be no overlapping of effort. These problems are becoming of larger and larger importance and their correct solution will undoubtedly constitute a large factor in meeting the problems presented by the present industrial unrest.

(17) *Laboratory Service.*—The laboratory of the Division of Sanitation was established and is maintained primarily for the purpose of examining water, sewage and liquid industrial wastes in connection with the activities of the division dealing with public water supplies, drinking water used on common carriers, sewerage and sewage disposal and the maintenance of the cleanliness of the waterways of the State. The same facilities also are available for making analyses of private wells and other sources of private water supply in limited numbers. During the fiscal year 32 analyses were made of private water supplies and the number of requests is steadily increasing.

To reduce this work to a minimum and at the same time make it really beneficial, it is the custom of the division to require a description of the source of water supply on a blank form furnished by the division before an analysis is made. If it is obvious from this information that the source of supply is receiving pollution, the owner or user is requested to make certain improvements before containers are sent out for samples. A further reduction in the amount of work is effected by using a mailing container which holds enough water for a partial analysis only. The determinations made include total bacterial count, the presence of the

colon bacillus (ascertained by a presumptive test), and chemical determination for nitrates, nitrites and chlorine. These are sufficient ordinarily to give a reliable indication of the sanitary quality of the water.

The work of the laboratory for the fiscal year is summarized in the following tabulation:

CLASSIFIED TABULATION OF NUMBER OF ANALYSES MADE IN  
LABORATORY

Month.	Year.	Interstate carriers.	Public water supplies.	Private water supplies.	Sewages and trade wastes.	Total.
July.....	1918	4	11	35	.....	50
August.....	1918	2	28	31	.....	61
September.....	1918	.....	7	16	.....	23
October.....	1918	.....	6	16	.....	22
November.....	1918	.....	.....	6	.....	6
December.....	1918	1	10	6	.....	17
January.....	1919	.....	10	4	.....	14
February.....	1919	.....	6	3	.....	9
March.....	1919	3	9	11	.....	23
April.....	1919	13	7	15	.....	35
May.....	1919	41	17	15	.....	73
June.....	1919	36	14	20	.....	70
July.....	1919	29	19	36	16	100
August.....	1919	15	30	79	2	126
September.....	1919	57	27	82	.....	166
October.....	1919	103	23	70	2	198
November.....	1919	66	42	30	17	155
Total.....	.....	370	139	475	37	1,021

The totals are not as large as they should be, for the reason that the laboratory was in full regular service only during the latter part of the biennium, due to the absence of the chief analyst in military service. The volume of work has been steadily increasing and the figures for the succeeding fiscal year will be not less than four times as great as those given in the tabulation. The laboratory cannot continue to meet the demands placed upon it unless more space is provided, additional equipment is obtained and unless the personnel is increased to at least eight analysts and necessary helpers.

(18) *Summer Resorts.*—The State Department of Public Health feels a special obligation in connection with the maintenance of sanitary conditions at summer resorts, inasmuch as these places are frequented by people from all over the State and should there exist any conditions that would favor the outbreak of communicable disease, such disease would be spread over a wide area by returning vacationists. Furthermore, the cheap and temporary character of buildings, with the correspondingly cheap and imperfect water supply and sewerage facilities so frequently found at summer resorts, is such that if not closely supervised they are very apt to lack the essential requirements for the protection of health.

During the present fiscal year, owing to lack of personnel, the inspection of summer resorts had to be almost entirely neglected, though a few inspections were made at places concerning which specific complaint was received, including several resorts along the Illinois River and several chautauquas. It should be practicable, at the beginning of every vacation season, for one or more representatives of the division to make a tour of the State by automobile to inspect every place where vacationists gather in considerable numbers, and vigorous steps should be taken to correct any conditions that may jeopardize health. There are many attractive places in the State of Illinois where many of our citizens may have a pleasant outing at small cost, and it is incumbent upon the State to encourage the use of such public recreation grounds and at the same time insure their healthfulness.

(19) *Public Swimming Pools and Bathing Beaches.*—Within the last five years there has been a pronounced popularization of public swimming pools and bathing beaches, and the number of such pools and bathing beaches has been multiplied many fold. The possibilities for the transfer of infection from one person to another in such places is obvious to the most casual observer.

There can be no argument against the desirability of encouraging so wholesome a sport as swimming, but to guard against danger to the public health, it is very important that every public swimming pool and beach in the State be examined by a competent person with reference to the quantity and quality of the water supplied, the construction and location of pools and beaches with reference to the entrance of polluting matter and the laundering of public bathing suits.

It is entirely feasible and practicable to establish and maintain pools and beaches in such manner that the water will always be safe and so that the public bathing suits will be essentially sterile. It is unquestionably the function of the State Department of Public Health to see that these requirements are rigidly complied with. The department has available laboratory facilities for this work, but has lacked personnel and it has been possible to examine but a few public bathing places in the city of Springfield only.

(20) *State House Water Supply.*—The municipal water supply of Springfield as delivered at the State Capitol Building is objectionable for drinking purposes because of frequent excessive turbidity and color due to the presence of iron and manganese. These minerals do not injure health, but make the water very unsightly and unpalatable. Until the early part of 1918, the State had been purchasing at large expense bottled spring water for drinking purposes. Moreover, this bottled water was sometimes of questionable purity inasmuch as it became contaminated in handling.

Both for the purpose of saving expense and delivering to the State House employees a water of assured good quality, the State Department

of Public Health installed a group of pressure filters in the laboratories of the Division of Engineering and Sanitation and developed a system of bottling and distributing water under conditions that absolutely prevent any contamination through handling. During the fiscal year, this service was in regular operation and 12,961 bottles were filled and placed on coolers at a cost of \$3,150 which represents a saving to the State over previous years of \$4,000. As the above figure of cost includes the filters, the cost of the service, when distributed over a series of years, will be even less.

(21) *Educational Work.*—The Division of Sanitation is in a position to do much valuable educational work, by way of preparing articles for publication in periodicals, bulletins and newspapers, by making public addresses and by preparing exhibits for use at State fairs and expositions. The demands made by the other work of the division have been so great, however, that the little educational work that has been accomplished has been carried on between times. Articles prepared for publication have principally been confined to the monthly "Health News" issued by the department, but these have been largely quoted by newspapers and other periodicals. This work might well be enlarged so that carefully prepared and fully illustrated articles on many timely subjects relating to sanitation could be gotten out at least once per month in such form that they may have a wide distribution all over the State.

Public addresses have been confined almost entirely to informal talks given by engineers of the division, in connection with projects for water supply and sewerage. This work might also advantageously be enlarged to include addresses at conventions dealing with social welfare, at schools, colleges and universities and at meetings of medical societies.

The preparation of exhibits has also suffered very much primarily from lack of funds. There are great possibilities in the matter of educating the public along sanitary lines by the preparation of interesting exhibits and the employment of a skillful model maker on a full-time basis would be well warranted for the purpose of constructing exhibits and keeping them in repair. It would also be desirable to maintain many of these models continuously on exhibit in a specially prepared room of the new Centennial Building.

*Division Personnel.*—As already indicated, the present personnel of the division is wholly inadequate to permit of properly carrying out all the activities enumerated in this report. There are now but five engineers, two analysts, three stenographers and two laboratory helpers. There should be not less than twenty engineers, inspectors and draftsmen, twelve stenographers and record clerks, eight analysts (already stated), three laboratory helpers and two messengers available for miscellaneous work, including packing and shipping, a large volume of which is handled by the division.



## DIVISION OF VITAL STATISTICS

SHELDON L. HOWARD, *Registrar*

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The most important event in the Division of Vital Statistics and one of the most important incidents in the entire State Department of Public Health for the year ending June 30, 1919, was the admission of Illinois to the registration area for deaths by the United States Bureau of the Census, notification of which was received October 14, 1918, the admission to the registration area being effective January 1, 1918.

In the test carried out by the special agents of the Bureau of the Census during the summer of 1918, it was found that the registration of deaths by the Division of Vital Statistics was 93.4 per cent complete and on this showing admission to the registration area was granted. The records of births, however, were found to be less than ninety per cent complete and Illinois was consequently refused admission to the registration area for births.

Admission to the registration area for deaths brings to a close many years of effort, oftentimes misdirected, toward the attainment of better registration of vital statistics. Inasmuch as all public health administration must be dependent upon mortality and morbidity figures the improvement in the registration of vital statistics of the past few years will necessarily increase the efficiency of the department as a whole.

Through larger appropriations by the Fifty-first General Assembly the working force of the Division of Vital Statistics has been expanded so that organization now consists of the following:

- 1 Registrar of Vital Statistics.
- 1 Assistant Registrar.
- 1 Classification clerk.
- 1 Recording clerk.
- 1 Receiving clerk.
- 1 File clerk.
- 2 Tabulating machine operators.
- 1 Stock and shipping clerk.
- 3 Stenographers and clerks.
- 2 Stenographers.
- 4 Typists and clerks.
- 1 Field agent.
- 1 Tabulating clerk.

### DIRECTORY OF REGISTRARS

Late in the summer of 1918 the Division of Vital Statistics issued a directory of local registrars of vital statistics for the convenience of

physicians, undertakers and registrars. This directory included all necessary information on the preparation and handling of certificates of births, still-births and deaths. The publication has proved of the utmost value and has doubtless brought about considerable improvement in results.

#### CONSOLIDATION OF REGISTRATION DISTRICTS

The division has come to realize the advantage of the consolidation and the reduction in number of registration districts. Changes have not been made, however, without a careful study of local conditions made by field agents. As a result of consistent effort along this line, the registration districts have been reduced from 1,799 to 1,557 and this reduction will be continued as local conditions warrant in the future.

#### IMPROVED OFFICE METHODS

Among the steps which have been taken to increase the efficiency of the Division of Vital Statistics has been the replacing of former registration books with registration cards devised to cover all of the requisites of the Illinois law, and at the same time to meet the requirements of the Bureau of the Census for a registration State. These cards indicate at a glance all registrars whose reports are not returned in accordance with the law, and also show all of the desirable data of the old registration books as follows:

A complete and constantly corrected list of all local registrars, deputies and subregistrars, their addresses and their jurisdiction.

A running record of all changes in personnel among the registrars, together with the dates such changes become effective.

A comparison with the returns as reported by each county clerk in order that vouchers for payment of fees may be properly audited or verified.

A view of the activity or nonactivity of each local registrar which will serve as a basis for any desired periodic reports of the Director to the Department of Public Health.

With the increased force of employees it has become possible to index all certificates of death as a preliminary to key punching of statistical cards. It is proposed that this indexing in compliance with the Illinois law may be extended to births and still-births within a short period of time.

Through added appropriations by the Fifty-first General Assembly there were installed in the office of the division during June, 1919, a mechanical sorting machine and a mechanical tabulator, which with two key punch machines already purchased, complete the equipment necessary for entire mechanical tabulation. It is believed that this provision will make possible the more accurate and more prompt production of statistical information.

## FIELD REPORTS

During the fiscal year, two field agents for the Division of Vital Statistics have visited and reported upon the local registrars and conditions surrounding them in the following counties of the State:

Mr. F. C Blandin.		Mr. H. T. Burnap.	
1918	1919	1918	1919
Christian. Grundy. LaSalle. Livingston. Macon. Macoupin. Marshall. Mason. Moultrie. Putnam. Shelby. Woodford.	Boone. Bureau. DuPage. Kane. Kankakee. Kendall. Knox. Lake. Lee. McHenry. Ogle. Stark. Stephenson. Will.	Bond. Champaign. Cumberland. DeWitt. Effingham. Fayette. Ford. Iroquois. Livingston. Logan. Piatt. Vermilion.	Brown. Carroll. Clay. DeKalb. Franklin. Fulton. Hamilton. Hancock. Henderson. Henry. JoDavies. Marion. McDonough. McLean. Mercer. Montgomery. Rock Island. Sangamon. Schuyler. Wayne. Whiteside.

## STATISTICAL REPORTS

During the fiscal year the Division of Vital Statistics has been called upon to supply a large number of statistical reports for other divisions of the Department of Public Health, for other departments of the State Government, and for other governmental and extra-governmental agencies. These reports included the mortality record of Illinois and other data for the fiscal year from July 1, 1917, to June 30, 1918, included in the last annual report, the United States Public Health Service annual mortality summary for the year 1918 and a table of comparison for the year 1917; comparative statistics relative to influenza and pneumonia mortality; comparative statistics for births and deaths for 1917-1918; statistical data for the Illinois Health Insurance Commission reports, and for the Council of National Defense. In addition, a large number of statistical reports were prepared covering individual communities for purposes of health and sanitary supervision; comparative statistics on tuberculosis employed in the campaigns for the establishment of county tuberculosis sanatoria; statistical data on the various communities for use in connection with Health Promotion Week, and a large number of special studies for State departments, health commissions, scientific bodies and educational institutions.

## ESSENTIAL STATISTICAL DATA

The following tables give a summary of essential statistical data compiled by the division:

TABLE I—SHOWING POPULATION, BIRTHS AND DEATHS FOR STATE OF ILLINOIS, 1917-1918

	State total including Chicago.	City of Chicago.	State exclusive of Chicago.
Estimated population July 1—			
1917.....	6,234,995	2,547,201	3,687,794
1918.....	6,317,733	2,596,681	3,721,052
Births—rate per 1,000 population—			
1917.....	108.896	49,556	59,340
	17.4%	19.4%	16.0%
1918.....	117,055	49,707	67,348
	18.5%	19.1%	18.1%
Deaths—all causes, rate per 1,000 population—			
1917.....	86,231	38,055	48,176
	13.8%	14.9%	13.0%
1918.....	103,138	44,605	58,533
	16.3%	17.1%	15.7%

TABLE II—SHOWING TOTAL DEATHS FROM ALL CAUSES, AND TOTAL DEATHS FROM INFLUENZA AND PNEUMONIA. COMBINED DEATHS FROM INFLUENZA AND DEATHS FROM PNEUMONIA (ALL FORMS). BY MONTHS FOR YEAR 1918

Month.	All causes.	Total influenza and pneumonia (all forms )	Influenza.	Pneumonia (all forms.)
Total.....	103,138	32,324	17,879	14,445
January.....	7,187	1,053	89	964
February.....	6,705	942	87	855
March.....	7,805	1,240	91	1,149
April.....	8,064	1,565	164	1,401
May.....	6,782	785	74	711
June.....	5,225	269	21	248
July.....	5,531	189	7	182
August.....	5,908	183	8	175
September.....	6,828	1,233	797	436
October.....	20,666	14,077	8,631	5,446
November.....	11,127	5,525	4,069	1,456
December.....	11,310	5,263	3,841	1,422
Total.....	103,138	32,324	17,879	14,445

TABLE III—SHOWING TOTAL DEATHS FROM ALL CAUSES, AND DEATH RATES PER 1,000 POPULATION BY MONTHS FOR THE YEAR 1918

(Estimated Population as of July 1, 1918—6,317,773)

Month.	Total deaths—all causes.	Death rates per 1,000 population
January.....	7,187	13.39
February.....	6,705	13.83
March.....	7,805	14.54
April.....	8,064	15.52
May.....	6,782	12.63
June.....	5,225	10.06
July.....	5,531	10.30
August.....	5,908	11.01
September.....	6,828	13.14
October.....	20,666	38.51
November.....	11,127	21.42
December.....	11,310	21.07
Total.....	103,138	16.32



TABLE IV—SHOWING TOTAL DEATHS FROM TWELVE PRINCIPAL DISEASES SHOWING DECREASE IN NUMBER FOR FISCAL YEAR JULY 1, 1918, TO JUNE 30, 1919, AS COMPARED WITH THE PREVIOUS FISCAL YEAR OF JULY 1, 1917, TO JUNE 30, 1918

Number of deaths.	Fiscal year July 1, 1918, to June 30, 1919.	Fiscal year July 1, 1917, to June 30, 1918.
Typhoid.....	458	581
Malaria.....	23	115
Smallpox.....	8	45
Measles.....	287	351
Scarlet fever.....	165	251
Whooping cough.....	342	708
Diphtheria.....	978	1,527
Influenza.....	22,208	17,879
Tuberculosis (all forms).....	8,141	8,661
Epidemic meningitis.....	86	210
Poliomyelitis.....	118	339
Pneumonia.....	12,898	8,277
Total.....	45,766	38,944

The accompanying table (Table V) shows that during the year from July 1, 1918, to June 30, 1919, there were 101,220 deaths from all causes in the State of Illinois with estimated population of 6,359,102, or a rate of 16.0 per 1,000 of population. Cook County, with a population of 2,904,800, recorded 55,908 deaths, or a rate of 19.2 per 1,000 of population.

It will be borne in mind that the year included in this table was marked by an epoch-making epidemic of influenza and that this disease was responsible for 22,207 deaths and probably responsible for a large portion of the 13,626 deaths attributed to pneumonia.

Aside from the mortality from influenza and from pneumonia, attention is directed to the fact that whooping cough, which is regarded as one of the minor and harmless diseases of childhood, is responsible for 424 deaths—practically the same mortality as was attributed to typhoid fever; also twice the mortality attributed to measles; also three times the mortality due to scarlet fever, and also fifty times as many deaths as were caused by smallpox. Interest also attaches to the fact that there were 120 deaths during the year due to acute anterior poliomyelitis, and 475 from syphilis with 192 attributed to "septic sore throat."

TABLE V—MORTALITY RECORD OF ILLINOIS, DEATHS FROM DISEASES  
30, 1919, INCLUSIVE, WITHNOTE.—Numbers in parenthesis at heads of columns refer to titles in the "Manual  
(Detailed)

Counties with important cities and towns.	Estimated population Jan. 1, 1919.	(1-189) Deaths—all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.					
				(1) Typhoid Fever.	(4) Malaria.	(5) Smallpox.	(6) Measles.	(7) Scarlet Fever.	(8) Whooping Cough.
The State.....	6,359,102	101,220	16.0	462	77	9	276	162	424
Adams County.....	164,588	1,076	17.0	8	2		2	1	4
Quincy.....	36,883	705	19.1	6	2		1	1	3
Alexander County.....	25,699	377	15.0	7	6		9		3
Cairo.....	16,296	314	19.3	6	4				
Bond County.....	17,949	162	9.0	2	4		1		
Boone County.....	115,481	222	14.3						
Brown County.....	110,397	92	9.0						
Bureau County.....	46,934	503	11.0	2			1	1	3
Calhoun County.....	18,610	105	12.2				1		8
Carroll County.....	118,035	164	9.1	2			1		1
Cass County.....	17,501	212	12.1						
Champaign County.....	55,539	775	14.0	5			4	1	2
Champaign.....	16,865	261	16.5				1	1	
Urbana.....	10,624	166	16.0	1			2		
Christian County.....	235,309	548	16.0	2		1		1	3
Clark County.....	123,517	278	12.0	1					1
Clay County.....	118,661	228	12.2	4					11
Clinton County.....	25,480	320	13.0	10	2			2	6
Coles County.....	34,842	512	15.0	P3	2		4	1	2
Maltoon.....	12,996	189	15.0	3			1		
Cook County.....	2,904,800	55,908	19.2	35	P4		177	89	147
Chicago.....	2,621,419	45,640	17.4	27	4		168	81	134
Chicago Heights.....	26,482	354	13.4				1	2	
Cicero.....	322,154	416	19.0				1	2	3
Evanston.....	30,178	508	17.0						4
Maywood.....	11,906	90	8.0				2		
Oak Park.....	429,562	502	17.0	1			1		1
Blue Island.....	9,742	212	22.0	1					
Crawford County.....	32,490	266	8.2						2
Cumberland County.....	114,281	134	9.4						
DeKalb County.....	34,953	500	14.3					1	1
DeKalb.....	10,036	138	14.0					1	
DeWitt County.....	118,906	266	14.1	2		1	1	1	
Douglas County.....	20,024	220	11.0	1			1		3
DuPage County.....	38,044	391	10.3	5					
Edgar County.....	127,336	337	12.3	1			1		
Edwards County.....	110,049	95	9.5	3	1				
Effingham County.....	120,055	300	15.0	4					
Fayette County.....	28,083	311	11.1	15	1		3		2
Ford County.....	117,096	207	12.1	1					1
Franklin County.....	31,466	738	23.5	20	5	1	4		10
Fulton County.....	52,501	688	13.1						7
Canton.....	14,858	231	16.0						3
Gallatin County.....	14,628	170	12.0	6	2				
Greene County.....	122,363	278	12.4	2	1		1		3
Grundy County.....	24,183	270	11.2	2				1	3
Hamilton County.....	118,227	130	7.1	7		1	3		1
Hancock County.....	130,638	340	11.1	1			3	1	1
Hardin County.....	17,015	119	17.0		1		2		3
Henderson County.....	19,724	82	8.4						
Henry County.....	43,224	417	10.0	5					
Kewanee.....	19,184	217	11.3	3					
Iroquois County.....	135,543	406	11.4	1			1	1	1
Jackson County.....	36,263	514	14.2	13	4				5
Jasper County.....	118,157	136	7.5	1			2		1
Jefferson County.....	29,973	344	11.5	9	2		1		4
Mt Vernon.....	10,464	168	16.1	5			1		2
Jersey County.....	113,954	158	11.3	1					
Jo Daviess County.....	122,657	213	9.4					1	

OF MAJOR SANITARY IMPORTANCE, BY COUNTIES, JULY 1, 1918, TO JUNE  
IMPORTANT CITIES AND TOWNS

of the International List of Causes of Death, Second Revision—Paris, 1909." (List)

## Diseases of major sanitary importance.

(9)	(10)	(23)	(28-29)	(30-35 incl.)	(90)	(61C)	(63D)	(91-92)	(100)	(37)	(38)
Diphtheria.	Influenza.	Rabies (In man) Hydrophobia.	Pul. Tuber- culosis.	Tuberculosis Other forms.	Chronic Bronchitis.	Cerebro- Spinal Fever.	Acute Anterior Poliomyelitis.	Pneumonia— All forms.	Septic Sore Throat	Syphilis.	Conococcus Infection.
979	22,207	3	7,022	798	345	92	120	13,626	192	475	25
4	211		58	6	6		2	106	3	4	3
4	156		47	6	5			61	2	2	3
2	P111		54	P8	1			36	1	4	
1	91		36	8				22	1	4	
1	57		4				1	12			
1	51		7		3		1	39		2	
	19		7					14	1		
1	148		20	1	3		3	58	1	4	
4	23		7	2				7			
	42		3	2		1	1	5			
3	79		12			2	2	12			
7	231		27	24	P3	1	6	82	1	3	
3	75		14	5	1		2	20		1	
1	57		5	3	2	1		15	1	1	
4	167		29	6	1		1	35		2	
	68		21	3		1		16	3	2	
	57		14	4		1		22			
1	63		12	2	1	2		33	2	2	
5	130		38	P2	4	1		37	1	2	
3	38		12	2	1			14		2	
665	9,286		3,835	473	190	54	24	7,822	P75	237	11
636	8,459		3,175	402	177	51	19	6,852	69	199	10
3	124		11	3				58	1		
10	80		25	2	1	3	1	71		2	
3	122		13	2	1		4	90	4	1	
2	12		6					19			
4	82		12	4	2	1	1	83			
2	61		7					17	1		
2	76		12	1	3			15		2	
	40		10	2		1		4		1	
1	115		25	4	2		12	34		1	
1	38		7		1		9	8			
1	77		16	3			1	26		2	
1	68		17	1	1		1	13		1	
3	83		38	1	2	1	2	36		1	
	83		18	1	1		1	21		5	
	21		8	1				9			
2	83		19	4		2		23		1	
1	82		25	1				21			
2	67		11	1			2	16			
6	244		37	1	1			101	1	1	
5	244		27	4	3	1		49	1	1	
1	93		7	2	1			18			
2	53		5		1			16			
4	84		14	3	2		1	16		2	
	101		20	1				30		1	
1	37		15					6	2		
2	93		18	1	1		2	20	2	1	
	53		17	1				7			
	22		4	1			2	4			
2	120		23	4	3	1	2	56	1	3	
	42		11	2			1	32		2	
1	111		20	2	1		2	50	3	3	
2	140		45	11				37	2	3	
1	43		14	1	2			12	1		
3	70		34	2		P1		19	1	1	
1	49		15	1		1		14	1	1	
	28		11		4			10	2		
	43		5		2		2	17	1	1	

TABLE V

Counties with important cities and towns.	Estimated population Jan. 1, 1919.	(1-189) Deaths—all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.					
				(1) Typhoid Fever.	(4) Malaria.	(5) Smallpox.	(6) Measles.	(7) Scarlet Fever.	(8) Whooping Cough.
Johnson County.....	114,331	157	11.0	3			1		4
Kane County.....	103,386	1,678	16.2	4	2	1		1	3
Aurora.....	35,681	694	19.5	3	1	1			2
Elgin.....	529,100	467	16.0	1		1			1
Kankakee County.....	43,919	994	23.0	5				2	2
Kankakee.....	14,327	324	23.0	4				2	
Kendall County.....	110,777	131	12.2						2
Knox County.....	48,405	664	14.0	4			2		2
Galesburg.....	25,155	412	16.4	4					1
Lake County.....	73,180	1,766	24.1	8	1		9	4	4
Waukegan.....	21,925	198	9.3	1					1
LaSalle County.....	92,208	1,538	17.0	5			1	1	10
LaSalle.....	12,495	254	20.3	3					
Ottawa.....	19,555	190	20.0						1
Streator.....	214,313	329	23.0	1					5
Lawrence County.....	28,072	256	9.1	1	1	1	1	1	8
Lee County.....	127,750	321	12.0	1					3
Livingston County.....	140,465	468	12.0		1		1		
Logan County.....	31,564	507	16.0	1			2		
Lincoln.....	211,991	350	29.2				2		
Macon County.....	63,163	930	15.0	6	1				3
Decatur.....	44,261	663	15.0	5	1				3
Macoupin County.....	58,166	601	10.3	1					6
Madison County.....	112,027	1,683	15.0	19	2			5	11
Alton.....	123,783	464	20.0	3		1		3	
Granite City.....	18,476	248	13.4	1	2				1
Marion County.....	39,188	568	14.5	9	1		2	1	4
Centralia.....	12,285	199	16.2	3					1
Marshall County.....	115,679	111	7.1	1				1	
Mason County.....	117,377	190	11.0	2				2	1
Massac County.....	15,157	278	18.3	5	2		1	1	1
McDonough County.....	126,887	344	13.0	2				1	1
McHenry County.....	34,930	380	11.0	1			1		1
McLean County.....	68,149	1,003	15.0	5			2	2	1
Bloomington.....	27,663	520	19.0	2			1	2	
Menard County.....	112,796	181	14.1	2					2
Mercer County.....	119,723	358	18.2	3					1
Monroe County.....	113,508	165	12.2	5					1
Montgomery.....	39,254	548	14.0	7			1		4
Morgan County.....	134,420	704	20.5	10	1				
Jacksonville.....	15,543	551	35.5	8					
Moultrie County.....	114,630	161	11.0		1				3
Ogle County.....	127,864	239	8.6						
Peoria County.....	110,524	2,110	19.0	8	2		3	5	6
Peoria.....	272,184	1,378	19.1	8	2			2	2
Perry County.....	24,075	337	14.0	2	1		1		
Piatt County.....	16,376	147	9.0						
Pike County.....	128,622	307	11.0	2	2				2
Pope County.....	111,215	47	4.2		1				1
Pulaski County.....	16,616	248	15.0	5	1				2
Putnam County.....	10,041	94	9.4	1					
Randolph County.....	30,101	427	14.2	15	1		1		7
Richland County.....	115,970	158	10.0	2					
Rock Island County.....	83,767	1,502	18.0	30	1		1	3	4
Moline.....	227,976	513	18.3	25				1	2
Rock Island.....	32,561	536	16.5	2	1		1	1	1
Saline County.....	37,715	179	13.0	8	3				15
Sangamon County.....	108,155	1,723	16.0	15			1	2	1
Springfield.....	64,877	1,310	20.2	13			1	1	1
Schuyler County.....	114,852	173	12.0						
Scott County.....	110,067	98	10.0	1					
Shelby County.....	131,693	327	10.3	6	1			1	1
Stark County.....	110,098	77	8.0	1				1	1
St. Clair County.....	149,130	2,204	15.0	21	4	1	3	3	10
Belleville.....	21,161	479	23.0	4	1				1
East St. Louis.....	78,213	1,323	17.0	13	2	1	2	1	7



—Continued.

## Diseases of major sanitary importance.

(9)	(10)	(23)	(28-29)	(30-35 incl.)	(90)	(61C)	(63D)	(91-92)	(100)	(37)	(38)
Diphtheria.	Influenza.	Rabies (In man) Hydrophobia.	Pul. Tuber- culosis.	Tuberculosis Other forms.	Chronic Bronchitis.	Cerebro- Spinal Fever.	Acute Anterior Poliomyelitis.	Pneumonia— All forms.	Septic Sore Throat	Syphilis.	Gonococcus Infection.
2	56	1	11	1	1			10			
12	335		99	9	6	2	7	171	P3	8	
5	147		43	5	2	1	1	100	3	2	
4	84		26	2	2			33		3	
	183		72	5	2		4	75	1	2	
	94		13		1		1	16		1	
	27		5	1	2			10		1	
2	140		44	5	P2			56	4	4	
1	90		28	4	2			32	2	2	
22	1,085		31	4		5		252	1		1
1	71		5	3		1		22			
9	400		78	9	8		1	173	6	3	1
	67		5	3	1			48			
	51		12	2	5			23		1	
3	117		14	3	2		1	29	1		1
4	61		16	5				21			1
	64		9	1	1	1	1	21		1	
	121		16	2	1			56	2	2	
2	110		107	6			1	29	3	1	
2	80		98	4			1	21	1		
13	188		50	11	5	P1		66	2	4	
11	128		36	9	3	1		52		3	
4	186		47	4	2		2	57	2	3	
12	399		148	8	5	P1		194	4	8	1
5	96		44	6	3			50		2	
3	82		8			1		23		4	
3	133		39	3	1			54	2	P1	
2	37		15					29		1	
3	37		5				1	9			
	50		10	2	2			16	1	1	1
3	91		24	3	2			29			
	73		20	2			1	22	1	3	
	70		22	1	1		1	34		1	
2	193	1	54	5	P5	1		72	P2	1	
2	110		32	2	5			48	2		
1	51		16	1				14	3		
	55		9	1				18			
	25		6		1		1	13			
3	111		34	3	2	1		51	1		
1	135		75	4			1	66	2	5	
1	80		59	4				53		5	
1	46		10	3				13	1		
2	40		7					26			
9	491		205	15	5		2	181	8	13	1
7	330		82	9	4		2	153	7	9	1
	407		29	2				12		1	
	45		7	2	2			12	1	38	
6	66		21		4			25	1	1	
	18		2					5			
1	62		34	2			1	33	2	3	
3	19		3				1	31			
2	114		28	1	2			26		1	
1	29		9	1	4		1	6			
18	391		106	8	P5	1	4	157	2	7	
6	131		33	4	3		1	60	1	2	
2	124		46	3	2			52	1	2	
2	135		29	2				26	2	1	
12	410		114	P12	P1		2	167	85	19	83
11	312		71	12	1		2	128	5	16	3
	43		7		1	1		14	1		
	19		5	1				12			
	75		28	2	3			26	1	1	
	17		3					5			
22	595		148	P13	7	4	2	241	3	11	1
8	136		31	2	2	1		60			
7	362		78	11	3	3	1	174	1	10	1

TABLE V

Counties with important cities and towns.	Estimated population Jan. 1, 1919.	(1-189) Deaths—all causes.	Death rate per 1,000 population.	Diseases of majorsanitary importance.					
				(1) Typhoid Fever.	(4) Malaria.	(5) Smallpox.	(6) Measles.	(7) Scarlet Fever.	(8) Whooping Cough.
Stephenson County.....	39,143	522	13.3	.....	.....	.....	2	2	2
Freeport.....	219,844	355	18.0	.....	.....	.....	2	2	2
Tazewell County.....	34,734	626	18.0	3	.....	.....	.....	.....	3
Pekin.....	12,137	276	23.0	.....	.....	.....	.....	.....	.....
Union County.....	121,856	508	23.2	7	2	.....	2	.....	2
Vermilion County.....	88,894	1,638	18.4	7	1	.....	2	.....	16
Danville.....	232,969	699	21.2	6	1	.....	.....	.....	4
Wabash County.....	16,965	186	11.0	2	.....	.....	.....	.....	1
Warren County.....	23,442	234	10.0	.....	1	.....	.....	P1	1
Monrovia.....	10,599	140	13.2	.....	.....	.....	.....	1	.....
Washington County.....	118,759	166	9.0	2	.....	.....	.....	.....	1
Wayne County.....	125,697	255	10.0	5	2	.....	2	.....	.....
White County.....	123,052	244	11.0	5	.....	.....	.....	.....	1
Whiteside County.....	134,507	459	13.3	1	1	.....	.....	1	4
Will County.....	92,841	1,373	15.0	7	.....	.....	P1	1	7
Joliet.....	39,353	759	19.3	3	.....	.....	1	.....	4
Williamson County.....	60,353	631	10.5	12	2	.....	.....	.....	17
Winnebago County.....	76,649	2,263	30.0	3	1	.....	9	10	2
Rockford.....	60,213	1,006	17.0	2	1	.....	5	2	2
Woodford County.....	120,506	221	11.0	.....	.....	.....	.....	5	.....
County total.....	6	101,220	16.0	462	77	9	276	162	424

<sup>1</sup> Population April 15, 1910; decrease between 1900 and 1910; no estimate made.

<sup>2</sup> Based on population as estimated by the Bureau of the Census as of July 1, 1917. No estimate for January 1, 1919, made. Decrease between estimate of 1916 and 1917.

<sup>3</sup> Based on population as estimated by the Bureau of the Census as of July 1, 1916, and July 1, 1917.

<sup>4</sup> Based on population as estimated by the Bureau of the Census as of July 1, 1917, and the population as of April 15, 1910.

—Concluded.

## Diseases of major sanitary importance.

(9)	(10)	(23)	(28-29)	(30-35 incl.)	(90)	(61C)	(63D)	(94-92)	(100)	(37)	(38)
Diphtheria.	Influenza.	Rabies (In man) Hydrophobia.	Pul. Tuber- culosis.	Tuberculosis Other forms.	Chronic Bronchitis.	Cerebro- Spinal Fever.	Acute Anterior Polomyelitis.	Pneumonia— All forms.	Septic Sore Throat.	Syphilis.	Gonococcus Infection.
2	98	.....	26	2	1	.....	1	41	1	3	.....
2	71	.....	21	1	1	.....	.....	21	.....	3	.....
8	135	.....	26	.....	.....	.....	.....	61	2	1	.....
8	54	.....	10	.....	.....	.....	.....	27	.....	.....	.....
1	120	.....	62	4	.....	.....	.....	42	.....	.....	.....
9	403	.....	95	11	P4	.....	1	107	4	9	.....
4	213	.....	35	4	4	.....	.....	46	1	3	.....
1	56	.....	10	1	2	.....	2	12	.....	.....	.....
3	54	.....	16	3	1	.....	1	15	2	3	.....
3	22	.....	11	1	1	.....	1	9	1	2	.....
2	40	.....	9	1	1	.....	.....	9	1	.....	.....
.....	90	.....	27	1	.....	.....	.....	24	.....	1	.....
5	63	.....	40	2	.....	.....	.....	30	.....	.....	.....
4	113	.....	16	3	2	.....	5	32	1	1	.....
7	378	.....	84	8	3	P1	.....	222	1	1	1
3	259	.....	29	7	3	1	.....	114	1	.....	.....
4	160	1	41	4	4	.....	.....	51	1	4	.....
15	300	.....	63	10	3	1	P3	1,342	P4	13	.....
12	217	.....	48	8	3	.....	3	165	4	6	.....
1	72	.....	9	3	.....	.....	1	27	1	.....	1
979	22,207	3	7,022	798	345	92	120	13,626	192	475	25

<sup>5</sup> Major portion of Elgin City lies within Kane County. See Elgin City, Kane County, for death rate covering entire city.

<sup>6</sup> See estimated population as of January 1, 1919, for State, Page 80.

<sup>7</sup> Based on population as estimated by the Bureau of the Census as of July 1, 1917.

<sup>8</sup> Corrected figure due to inclusion of delayed returns.

TABLE VI—REPORTED BIRTHS IN ILLINOIS, BY COUNTIES AND PRINCIPAL CITIES AND TOWNS, JULY 1, 1918 TO JUNE 30, 1919, INCLUSIVE.

Counties with important cities and towns.	Total July 1, 1918 to June 30, 1919 inclusive.	Counties with important cities and towns.	Total July 1, 1918 to June 30, 1919 inclusive.
The State.....	106,457	Ottawa.....	205
Adams County.....	599	Streator.....	261
Quincy.....	568	Lawrence County.....	288
Alexander County.....	309	Lee County.....	387
Cairo.....	164	Livingston County.....	630
Bond County.....	240	Logan County.....	442
Boone County.....	159	Lincoln.....	182
Brown County.....	125	Macon County.....	1,187
Bureau County.....	750	Decatur.....	757
Calhoun County.....	160	Macoupin County.....	975
Carroll County.....	168	Madison County.....	1,962
Cass County.....	218	Alton.....	477
Champaign County.....	1,041	Granite City.....	326
Champaign.....	256	Marion County.....	702
Urbana.....	185	Centralia.....	263
Christian County.....	677	Marshall County.....	199
Clark County.....	346	Mason County.....	232
Clay County.....	311	Massac County.....	204
Clinton County.....	462	McDonough County.....	391
Coles County.....	686	McHenry County.....	496
Mattoon.....	313	McLean County.....	1,123
Cook County.....	52,329	Bloomington.....	416
Chicago.....	47,299	Menard County.....	279
Chicago Heights.....	369	Mercer County.....	378
Cicero.....	664	Monroe County.....	203
Evanston.....	832	Montgomery County.....	717
Maywood.....	108	Morgan County.....	609
Oak Park.....	874	Jacksonville.....	297
Blue Island.....	215	Moultrie County.....	251
Elgin.....	4	Ogle County.....	297
Crawford County.....	413	Peoria County.....	1,436
Cumberland County.....	256	Peoria.....	1,024
DeKalb County.....	551	Perry County.....	383
DeKalb.....	161	Platt County.....	237
DeWitt County.....	349	Pike County.....	476
Douglas County.....	308	Pope County.....	36
DuPage County.....	388	Pulaski County.....	136
Edgar County.....	372	Putnam County.....	178
Edwards County.....	134	Randolph County.....	539
Effingham County.....	287	Richland County.....	252
Fayette County.....	415	Rock Island County.....	1,521
Ford County.....	326	Moline.....	796
Franklin County.....	566	Rock Island.....	413
Fulton County.....	762	Saline County.....	368
Canton.....	183	Sangamon County.....	1,801
Gallatin County.....	268	Springfield.....	1,266
Greene County.....	392	Schuyler County.....	225
Grundy County.....	286	Scott County.....	87
Hamilton County.....	246	Shelby County.....	448
Hancock County.....	395	Stark County.....	125
Hardin County.....	166	St. Clair County.....	2,374
Henderson County.....	113	Belleville.....	452
Henry County.....	776	East St. Louis.....	1,161
Kewanee.....	287	Stephenson County.....	541
Iroquois County.....	629	Freeport.....	322
Jackson County.....	657	Tazewell County.....	705
Jasper County.....	274	Pekin.....	230
Jefferson County.....	415	Union County.....	358
Mt. Vernon.....	169	Vermilion County.....	1,536
Jersey County.....	229	Danville.....	678
Jo Daviess County.....	323	Wabash County.....	177
Johnson County.....	126	Warren County.....	334
Kane County.....	1,603	Monmouth.....	470
Aurora.....	850	Washington County.....	239
Elgin.....	344	Wayne County.....	270
Kankakee County.....	640	White County.....	365
Kankakee.....	299	Whiteside County.....	611
Kendall County.....	166	Will County.....	1,278
Knox County.....	742	Joliet.....	295
Galesburg.....	387	Williamson County.....	816
Lake County.....	922	Winnebago County.....	1,381
Waukegan.....	263	Rockford.....	1,199
LaSalle County.....	1,555	Woodford County.....	342
LaSalle.....	307		
		Total all counties.....	106,457



## MISSIONARY WORK

During the previous two or three years a great deal had been accomplished in creating public interest in the registration of vital statistics through the activity of various health, social and philanthropic agencies operating throughout the State. During the past year an attempt has been made to maintain a thoroughgoing spirit of cooperation, but the subject has lost more or less of its novelty and the various agencies have not proven as responsive or enthusiastic as in the past. On this account the Division of Vital Statistics has deemed it wise to develop a program of education or missionary work and to place chief reliance in obtaining publicity upon its own staff and organization.

In an effort to familiarize physicians, undertakers and coroners with the requirements of the Registration Law, addresses have been given by the Assistant Registrar of Vital Statistics and other representatives of the department, at undertakers' and coroners' meetings and before State and county medical societies. These public addresses have been supplemented by thousands of letters sent to communities where stimulation seemed most desirable.

Local cooperation has been increased materially by the two field agents who have traveled throughout the State and valuable assistance has also been received by a district health officer from the Division of Communicable Diseases, who has not only appeared at conferences of physicians, undertakers and coroners, but who has delivered popular lectures before chautauquas and at other large gatherings, for the purpose of impressing the importance of birth and death registration more directly upon the people.

Considerable publicity of the right sort has also been obtained through newspaper articles, the monthly editions of the "Health News" and other efforts of the Division of Public Health Instruction.

## LEGAL TEST OF DIVISION METHODS

During June, 1919, in the case of *Henniger v. The Inter-Ocean Casualty Company*, the methods of the Division of Vital Statistics were put to legal test, the information brought out in this case causing the chief of the division to recommend that an amendment be made to the Vital Statistics Law providing that certified copies of death certificates be obtained only from the offices of the division at Springfield.

In the trial of this case there were presented three different certified copies of a certificate of death; only one of these—the one taken from the records of the division at Springfield—was found to be correct and complete. The very obvious and glaring faults in the other two cases were said to be due to a misunderstanding of technical terms and of the proper method of preparing such copies on the part of local registrars.

## COMPENSATION OF LOCAL REGISTRARS

The State law provides that the local registrar shall be paid the sum of twenty-five cents for each certificate of birth and each certificate of death, up to 5,000 such certificates, in each calendar year, provided the certificates are deposited with the State Department of Public Health and copies are filed with the county clerk, and it is a duty of the Division of Vital Statistics to prepare statements of fees due the registrars.

This clerical work in times past resulted in endless confusion. Under the old method, each registrar prepared his own claim which was checked over by the county clerk who, in turn, forwarded the statement to the Division of Vital Statistics. In this way the division was called upon to deal with about 1,800 claims each year, many of which were delayed in transmission or incorrectly prepared. Under a new plan, the division furnishes the county clerk with a blank which is filled out with the claims of all registrars in the county, the accuracy of the complete statement being guaranteed by the county official. In this way the division has to deal with but 102 claims and all claims are received for final checking in the shortest possible time.

In Cook County, the board of county commissioners failed to appropriate funds to pay local registrars from January 1, 1916, until the middle of the year 1919, in spite of the efforts of the Department of Public Health and of the Attorney General to do so. This has resulted in incomplete registration in Cook County.

With the appropriation of 1919 finally made, however, it is expected that annual appropriations will be made regularly in the future.

## ENGRAVED CERTIFICATES OF BIRTHS

The engraved certificates of birth registration, given to the parents of each child registered under the law, which have been in use for the past few years, have added much to the completeness of birth registration. Wide publicity has been given to these certificates, and the demand for them is quite general and, inasmuch as they are treasured by the parents and are carefully inspected, their use has led to many corrections especially when the name of the child has been incorrectly given.

## DEVELOPMENT WORK

With the admission of Illinois to the registration area, it became necessary for the division to revise its methods in accordance with the requirements of the Bureau of the Census. In the past, it had been the custom of the division to accept the assigned cause of death without demanding of the physician or coroner additional or explanatory information.

To meet the demands of the Bureau of the Census, there was created a classification section which immediately began the rechecking and reclassification of certificates received during the year 1918. Of the 58,533 certificates received during the year, 8,400 (or almost one in

seven) were found unsatisfactory, requiring correspondence to obtain correction before they could be finally filed. As these pages are written, it may be stated that practically all of the 1919 certificates have been corrected, but that about 3,400 of those received in 1918 are still awaiting rectification. In view of the length of time which has elapsed since these certificates were prepared, it is proving exceedingly difficult to complete the undertaking.

It has been the policy of the division not to defer the correction of 1919 certificates until those of 1918 are completed, but rather to keep the current reports corrected and accurate. Of the 24,776 certificates received for 1919, up to the time this report was prepared (September 1), 3,586 have required correspondence to secure additional or explanatory data.

By January 1, 1920, it is expected that the correction of all past certificates will be completed and that the new year will be started with records clear.

During the past year, a system of form letters covering the "unsatisfactory causes of death" has been prepared and this system may be employed in future years with considerable saving of time and of clerical service.

The work of the division has also been simplified and perfected by the adoption of a new monthly report card (Form V. S. 10) and a card used by the registrar when no birth, still-birth or death has occurred in his district (Form V. S. 13). Both of these cards have space for the registrar to report any violations which may have occurred or other information which should be brought to the attention of the division.

The adoption of a new method of numbering certificates upon their receipt has added to the efficiency of the division. By this plan the certificate is given a serial "office number" and a serial "county number," preliminary to card indexing, and in this way it may be known at any given moment the exact number of certificates which have been received for the year and also the exact number received from each county. In addition each certificate bears the number affixed to it by the local registrar, the last certificate received showing the total for the registration district.

#### FRANKING PRIVILEGE

By virtue of being accepted in the registration area, the division has been accorded postal franking privilege both for outgoing mail and for replies relative to matters relating to registration. In view of the very large correspondence entailed in correcting faulty certificates, this has resulted in a very material saving of expense to the State.

#### STATISTICAL SCHEME

Since the reorganization of the division under the provisions of the Civil Administrative Code, an effort has been made to carry out an ideal statistical scheme for guidance in public health administration. This

has consisted of : (1) Population statistics; (2) Birth statistics; (3) Marriage statistics; (4) Divorce statistics; (5) Mortality statistics; (6) Illinois life tables.

To this end, populations are estimated every six months for the State as a whole, for counties and for cities of over 8,000 population, based upon the past Federal Census.

While Illinois was denied admission to the registration area for births in 1918, the reports of births are steadily improving. During 1917, there were 108,898 births reported or a rate of 17.4 per 100,000 of population, while in 1918, there were 117,055 births reported or a rate of 18.5 per 100,000 of population. With the payment of local registrars adjusted in Cook County and the attainment of 90 per cent registration in the city of Chicago, admission to the registration area for births should not be much longer delayed.

Marriage and divorce statistics can be compiled from the data now in the files of the division whenever such data are required.



## DIVISION OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

CLARENCE W. EAST, M. D., *Chief*

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The Division of Child Hygiene and Public Nursing was one of the new divisions created on July 1, 1917, with the re-organization of the Department of Public Health under the provisions of the Civil Administrative Code. Through appropriations made by the Fiftieth General Assembly, it was made possible to establish public health nursing service in connection with the department for the first time in the history of the State. During the fiscal year ending July 1, 1919, the division had only personnel sufficient for the carrying out of a limited program, but in spite of this handicap, it has been possible to establish and operate about twenty clinics for crippled children and to stimulate the inauguration of child welfare work and nursing service in many parts of the State.

Through the increased appropriations made by the Fifty-first General Assembly, there has been employed a Supervisor of Nursing Service who will devote her time and attention to the stimulation of public health nursing activities in the different communities, and in the coordination of nursing service maintained by the various governmental and extra-governmental agencies along the lines suggested in the preceding report of the Executive Division. The Fifty-first General Assembly also made such appropriations as will permit the development of the Division along independent lines with the employment of a much needed medical assistant and stenographic and clerical service for which the division has had to depend in the past upon the courtesy of other division chiefs.

### RECONSTRUCTION CLINICS

Perhaps the most important work of the Division of Child Hygiene and Public Health Nursing has been the clinical service conducted in many parts of the State for the physical reconstruction of crippled children. This work was inaugurated a number of years ago when the chief of the division was serving as a district health officer, attention at that time being given almost exclusively to the victims of poliomyelitis, or infantile paralysis. Since that time, the clinical service has been expanded in its scope until at present these clinics receive all crippled children, regardless of the causal factor bringing about the crippled condition. During the fiscal year ending June 30, 1919, clinics have been conducted in twenty-one communities scattered throughout the State and in these clinics, 1,298 different individuals have received attention, re-

quiring medical service in 3,447 cases. An analysis of this clinical work is shown in the table which is published herewith, but no method of tabulation can express the great value of this clinical work. Incidentally, the accomplishment of this amount of clinical service with the very limited personnel of the division, indicated not only the very general need for such service throughout parts of Illinois, but is suggestive of what could be accomplished if the division were adequately manned as to clinical workers and nurses. Reference to the table showing the clinical work accomplished will impress upon the interested person that the State has been only partly covered and that wide areas in which service is acutely needed are as yet untouched.

In addition to the relief given to these 1,300 crippled young persons, and the probable saving of the large majority from more or less future dependency, there is also to be considered the following fruitage of these clinics:

- (1) Distinct stimulation of general interest in public health work throughout the State.
- (2) Stimulation of interest in public health nursing.
- (3) An increase in the general interest in child hygiene.
- (4) The development of a new sense of obligation on the part of many people in many communities as to the State Department of Public Health.
- (5) The development of a spirit of cooperation and coordination of local agencies both governmental and extra-governmental interested in public health.

One of the most interesting illustrations of community cooperation in public health endeavor is to be found in the provision of braces and appliances for these crippled children in all sections of the State as soon as it was brought home to public officials, private individuals and extra-governmental organizations, that the future physical well-being of a large number of children was dependent upon their being provided with adequate braces and appliances. The response has been quite astonishing and there is reason to anticipate through an extension of this clinical work, a day when every crippled child not under competent medical advice will have had an opportunity for physical reconstruction and physical betterment.

#### GENERAL ACTIVITIES

The epidemic of influenza during the autumn of 1918 and the winter of 1918-1919, demanded the attention of the division for a considerable period of time. The chief of the division gave much of his time as chairman of the Influenza-Pneumonia Commission of the city of Springfield, which was a practical federation of both State and city public health agencies, the American Red Cross, the Springfield Tuberculosis Association and Visiting Nurse Service, the Springfield Board of Education, and the Sangamon County Medical Society. In addition

to the administration of general medical relief work, the commission operated an emergency hospital of about a hundred beds for a period of eight weeks.

During the influenza epidemic, the two nurses assigned to the division were constantly in the field devoting themselves especially to the organization of emergency hospitals. Their services were particularly helpful in Chicago, Eureka, Carthage, Springfield, Benld, Virden, Winnetka, Wilmette, Barrington, Morris, South Wilmington, Coal City, West Frankfort, Benton, Gardner, East St. Louis, Carrollton, West Baden, Beckemeyer, Breeze, and Trenton, and also in the rural communities of Franklin, Pope, Gallatin, Marion, Saline, St. Clair and Cook Counties.

But for the timely and efficient service of these two nurses, many of these communities would have suffered much more acutely than they did during the tragic course of the epidemic.

#### EDUCATIONAL WORK

The entire personnel of the Division of Child Hygiene and Public Health Nursing participated in the Better Babies contest held in connection with the Illinois State fair of 1918, and will similarly participate in the larger contest to be held in connection with the fair of 1919. The chief of the division is called upon to serve as chief consultant to the parents of all those children examined in connection with these contests.

In addition to the Better Babies Conference in connection with the State fair, similar conferences and contests have been held in connection with county fairs and to these the division has rendered all possible service.

Each member of the staff of the division has responded to repeated invitations for addresses and demonstrations, especially on the subjects of public health nursing and child hygiene. The demand for this educational work is so great that at no time has the division been able to respond to all of the requests made upon it.

#### INTER-DEPARTMENTAL COOPERATION

The Division of Child Hygiene and Public Health Nursing has constantly cooperated with other divisions of the State Department of Public Health during the past year, this cooperative work being particularly identified with the Division of Communicable Diseases and the Division of Surveys. As these pages are written, the nurses connected with the division are devoting a large portion of their time in connection with the sanitary survey of East St. Louis, which is being carried out by the Division of Surveys and Rural Hygiene in conjunction with the War Civics Committee.

## CONSTRUCTIVE WORK

In the general program of coordination of nursing service in conjunction with the American Red Cross, the Illinois Tuberculosis Association and other agencies, the Division of Child Hygiene and Public Health Nursing gives promise of extensive development. During the coming year, public health nursing has come to be accepted as an exceedingly important part of all activity for the promotion of health or the prevention of diseases, and it will be an important function of the division to develop, standardize and correlate all public health nursing activities in the future.

	Number of clinics.	Number cases visiting clinics.	Number visits to clinics.	Shoe-braces, casts, appliances.	Special and assisted training.	Number patients attending clinics that were not paralysis cases.	Cases recovered.	Referred to family physician.	Death from other causes.	Hospital care.	Wassermann tests.	Operations advised.	Moved out of city.	X-Ray.
Alton.....	5	47	75	23	15	35	1	7	.....	1	6	7	.....	5
Aurora.....	8	49	100	33	27	20	.....	7	.....	2	5	1	.....	1
Bloomington.....	1	14	14	8	8	10	.....	.....	.....	1	1	2	.....	3
Blue Island.....	7	58	95	38	39	13	2	5	.....	3	4	1	.....	5
Champaign.....	1	20	20	.....	.....	15	.....	.....	.....	.....	.....	.....	.....	.....
Danville.....	9	78	174	47	39	38	.....	4	.....	5	1	4	.....	5
East St. Louis.....	1	17	17	.....	6	13	.....	.....	.....	.....	5	2	.....	.....
Freeport.....	6	154	226	77	58	92	1	15	2	.....	9	6	.....	12
Jacksonville.....	1	17	17	10	7	14	.....	1	.....	.....	1	.....	.....	4
Joliet.....	1	36	36	25	1	11	.....	2	.....	.....	5	.....	1	2
Kankakee.....	8	60	113	25	28	19	4	6	.....	5	5	.....	2	5
Moline.....	4	37	46	26	19	15	.....	2	.....	1	1	.....	.....	2
Monticello.....	6	72	118	41	29	42	4	5	.....	7	.....	1	1	6
Oak Park.....	7	42	61	26	26	10	.....	3	.....	1	1	3	.....	4
Ottawa, Streator.....	8	59	83	34	17	5	1	3	3	2	1	2	4	1
Quincy.....	6	76	123	44	32	45	.....	8	.....	4	8	3	.....	4
Rockford.....	2	24	32	16	9	14	.....	5	.....	2	2	2	.....	2
Rock Island.....	3	13	31	9	9	.....	.....	1	.....	1	.....	.....	.....	.....
Springfield.....	70	360	1,887	249	161	174	5	18	.....	32	9	10	.....	40
Waukegan.....	8	65	179	39	45	26	1	5	.....	4	4	.....	2	3
Total.....	162	1,298	3,447	770	575	615	19	97	5	70	68	44	10	104



## DIVISION OF SURVEYS AND RURAL HYGIENE

PAUL L. SKOOG, *Supervisor of Surveys*

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During America's participation in the war, the Division of Surveys and Rural Hygiene was almost constantly engaged in making sanitary and health studies of zones surrounding military camps and cantonments and of those cities adjacent to military camps, or communities which were engaged in large war-time industrial activities.

The division has been seriously handicapped through lack of personnel and stenographic and clerical service. With increased appropriations provided by the Fifty-first General Assembly, however, the division will be able to maintain an office of its own and to carry on its work without imposing for clerical and field assistance upon the other divisions of the department.

The sanitary or health survey has become a definite and recognized part of all constructive and forward-looking public health activity. The importance of such surveys, as the foundation for efficient municipal work, has become so general that the division has had to refuse to engage in a large number of proposed municipal studies on account of its inability to handle the volume of work.

At the beginning of the fiscal year, the division was still engaged in the completion of the reports of surveys of Waukegan and North Chicago, two important industrial cities, and of the city of Rockford which had become an important war-time municipality on account of the establishment of Camp Grant, with a military population of something like 40,000 men, immediately adjacent to the city.

The reports on the surveys of North Chicago, Waukegan and Freeport have already been transmitted to the municipal authorities and other interested persons and have been responsible for some desirable changes in the public health work of these communities. The report of the Rockford survey is now ready for publication.

The most important individual study made by the Division of Surveys and Rural Hygiene during the past fiscal year, has been that of the city of East St. Louis, made at the instance of the War Civics Committee as a part of an intensive community study carried out jointly by the municipal and the Federal Government.

East St. Louis occupies an unusual place among Illinois municipalities. For the period from 1900 to 1910 this city showed more rapid growth than any other in Illinois, developing from a relatively unim-

portant community largely dependent upon the city of St. Louis, located immediately across the river from it, into one of the most important industrial communities in the middle west.

East St. Louis has a large negro population and a very large foreign-born industrial population. It also has, to a singular degree, the problem of the absentee landlord, a very large number of the industrial and business activities of the community being owned and directed by persons residing in some other town or city.

Containing, as it does, tremendous meat packing industries and other plants of large proportions; populated, as it is, by large numbers of negroes and foreign-born persons; situated, as it is, in the immediate proximity of one of the largest cities of the Nation and in a territory given over to large industrial enterprises, East St. Louis offers such complex social and health conditions to be found in Pittsburg, Bethlehem, Birmingham and other similar communities.

During the war, East St. Louis became especially active as a market and manufacturing point for military supplies and a large aviation field was established only a few miles away at Belleville. The reports of exemption boards and of military medical examiners indicated an unusual prevalence of venereal diseases, making this question one of grave concern to State and Federal authorities. The social and civic conditions were further complicated by a so-called "race riot," which had occurred some time before, giving rise to an unsettled condition in industry, threatening in some respects the productivity of the city.

The East St. Louis health survey occupied the attention of the Division of Surveys and Rural Hygiene for a number of months, this division calling upon the Divisions of Sanitation, of Communicable Diseases, of Child Hygiene and Public Health Nursing, of Social Hygiene, of Tuberculosis, and of Vital Statistics and receiving from them most effective cooperation.

Upon the completion of the East St. Louis survey, the field work of which is practically done, as these pages are written, the division will engage in an extensive health and sanitary survey of the city of Alton, located on the Mississippi River some twenty miles above St. Louis, and rapidly becoming one of the most important of industrial communities of the middle west. The Alton survey will be carried out on the invitation of and with the cooperation of the Alton Commercial Association, this active organization of manufacturers and business men having become aroused to the practical need for a thorough knowledge of its underlying conditions, provided the city is to be developed as a progressive municipality in time to come.

The work in rural sanitation or rural hygiene has not been pressed as actively during the past year as in previous times, much of the rural sanitary work being assumed by the Division of Sanitation. During the influenza epidemic of the autumn of 1918 and winter of 1918-1919, the

Division of Surveys and Rural Hygiene was engaged in intensive studies of a number of communities to ascertain the prevalence of influenza and pneumonia in each of the several succeeding epidemics that occurred, this information being gathered in each instance by painstaking house to house canvasses. Information was also gathered during these studies relative to the extent of the use of preventive vaccines and the apparent results of such use.

## DIVISION OF DIAGNOSTIC LABORATORIES

MARTIN DUPRAY, *Chief Bacteriologist*

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During the fiscal year ending June 30, 1919, the Division of Diagnostic Laboratories performed its own function, and at the same time laid the foundation for the Division of Research and Biological Laboratories made possible by the appropriations made by the Fifty-first General Assembly.

During the war the Division of Diagnostic Laboratories was considerably crippled by the enlistment in military service of its chief, and of other important members of its personnel, and on account of the fact that during the war the demand for laboratory technicians was so great as to render it almost impossible, either to complete the laboratory organization as was originally contemplated in the reorganization of the State Department of Public Health under the provisions of the Civil Administrative Code, or to replace those who were absent on military duty.

In spite of these handicaps the division not only met the ordinary demands of the State for laboratory service, but also rendered a large amount of unusual service made necessary by war-time conditions, and in connection with the influenza epidemic.

### ROUTINE WORK OF THE DIVISION

The laboratories at Springfield regularly carried out the following examinations, without charge, for public officials, physicians or under certain conditions, for private individuals; (a) the examination of cultures from the throat and nose, for the detection of diphtheria bacilli; (b) examination of sputum and pus in suspected cases of tuberculosis; (c) the examination of blood and spinal fluid in suspected cases of syphilis; (d) the examination of pus smears for the detection of gonorrhea; (e) the examination of blood smears for the detection of the bacillus typhosus, the bacillus of paratyphosus A and paratyphosus B for the diagnosis of typhoid fever or paratyphoid fever; (f) the examination of blood specimens for the diagnosis of malaria; (g) the examination of spinal fluid for the detection of meningococci in the diagnosis of epidemic meningitis; (h) the examination of feces and urine for the detection of typhoid and paratyphoid carriers.



In addition to this rather wide range of free diagnostic laboratory service carried out at Springfield, the division maintains branch laboratories at Chicago, Galesburg, Urbana and Mount Vernon, in which, at the present time, examinations are made merely for the diagnosis of diphtheria. The breadth of service of these laboratories, however, will be extended as rapidly as personnel and appropriations permit.

#### ROUTINE OF EXAMINATION AND REPORTING

In order to make reports on all specimens submitted for diagnostic purposes within the shortest possible time, the Division of Diagnostic Laboratories has adopted the following plan: Swabs from suspected diphtheria cases, received before noon, are examined at 4 o'clock on the same day, and if found positive, are so reported at once. In case there is a negative finding, or specimens arriving afternoon, such specimens are placed in the incubator over night and examined the first thing the following morning. Immediately after examination, whether in the late afternoon or in the early morning, a written report is prepared and is forwarded by first mail to the physician submitting the specimen, and a copy of this report is kept on file in the office as a matter of record. In addition to the report sent by mail, special and immediate reports are made by telephone or telegram, when so requested by the physician and when the physician is willing to meet the additional expense.

Wassermann tests are now run three times a week as was formerly the custom. These tests, for the diagnosis of syphilis, are conducted on Monday, Wednesday and Friday, giving a day between each run for the sterilization of glassware and for the preparation of specimens and reagents.

All culture media used in the laboratory are prepared by the division at a very material saving of expense to the State. For example, Loeffler's Blood Serum, of which enormous quantities are used during the year, is prepared at a cost of less than twenty-five per cent of the prices formerly charged by commercial houses to the department.

Outfits in strict conformity with the United States Postal Department, for the transmission of specimens of bacteriological or serological analyses, are furnished free to physicians making requests for same, either direct to the laboratory or to the local agent in his community.

The following mailing outfits in sterile double containers are now furnished: (a) sterile glass tube with blood letting needle for the collection of blood and spinal fluid for Wassermann tests; (b) a sterile glass tube and swab for the transmission of swabs from the nose and throat for the detection of diphtheria; (c) a small glass bottle containing a five per cent phenol solution for the transmission of sputum from those suspected as being tuberculous; (d) a sterile glass bottle containing twenty-five per cent glycerine solution for collecting feces specimens; (e) a single container outfit with two glass slides for transmitting pus

smears for the detection of gonococci and blood smears for the diagnosis of malaria; (f) slips of parchment paper enclosed in a sterile envelope for the transmission of blood specimens for the Widal test for the detection of typhoid and para-typhoid infection.

All of these mailing outfits are accompanied by suitable history cards for the use of the physician in transmitting essential points in regard to the case to the division and these cards, when received with the specimens, are numbered and placed on file, suitably indexed, to constitute a part of the complete record of the specimens received.

During the fiscal year 11,009 of these containers or mailing cases have been distributed to physicians or to laboratory agents. Of these, 3,566 were for sputum specimens, 3,294 for specimens for Wassermann test, 1,950 for throat swabs for diphtheria, 1,424 for typhoid or para-typhoid, 728 were microscopic slides, and 47 containers for miscellaneous specimens.

#### LABORATORY WORK FOR THE YEAR

The work carried out by the main Diagnostic Laboratories at Springfield for the year ending June 30, 1919, has been very much greater in extent and much more varied in scope than the work of any previous year. - During the year 12,003 specimens were examined, as compared with 10,449 specimens during the year ending June 30, 1918, and 6,013 specimens during the year ending June 30, 1917.

Examinations of swabs for the diagnosis of diphtheria numbered less during the past year than for the previous year, as did the number of Widal tests for typhoid fever. Examination of sputum specimens for the diagnosis of tuberculosis showed some increase amounting to 34,062 as compared with 30,013 for the previous year. The number of Wassermann tests for syphilis showed great increase, there being about five times as many specimens examined during the past year, as in the year next previous, and thirteen times as many as for the year ending June 30, 1917. A very decided part in the increase for the past year is represented in new work not previously undertaken, including examinations for the diagnosis of typhoid, para-typhoid, gonorrhea, malaria, rabies and meningitis.

The complete work of the Central Laboratory by months for the past fiscal year, and the comparison of work for the past three years will be found in the following table:

REPORT OF WORK DONE BY MAIN LABORATORY FOR FISCAL YEAR  
1918-1919

	Diphtheria.	Tuberculosis.	Wassermann.	Typhoid.	Paratyphosus A.	Paratyphosus B.	Gonococcus.	Malaria.	Rabies.	Meningitis.	Miscellaneous.
July, 1918.....	126	310	185	247	247	247	78	3	1	.....	27
August, 1918.....	43	270	128	279	279	279	37	13	2	.....	18
September, 1918.....	268	223	183	190	190	190	66	4	.....	.....	24
October, 1918.....	125	194	129	132	132	132	27	4	.....	1	31
November, 1918.....	95	178	134	50	50	50	29	.....	.....	1	18
December, 1918.....	76	204	116	49	49	49	42	1	.....	1	9
January, 1919.....	72	285	145	78	78	78	21	1	.....	.....	15
February, 1919.....	81	264	168	50	50	50	30	2	.....	3	26
March, 1919.....	65	323	201	43	43	43	33	4	.....	.....	33
April, 1919.....	134	394	293	51	51	51	39	.....	1	.....	26
May, 1919.....	76	393	447	37	37	37	65	8	1	.....	12
June, 1919.....	50	425	543	68	68	68	59	4	.....	.....	11
Total 1918-1919.....	1,211	3,462	2,672	1,274	1,274	1,274	526	44	5	11	250
Total 1917-1918.....	4,069	3,113	592	1,541	.....	.....	.....	.....	.....	.....	1,184
Total 1916.....	1,937	2,690	200	1,182	.....	.....	.....	.....	.....	.....	4

While the work done by the branch laboratories has been largely confined to examination of swabs for the diagnosis of diphtheria, some additional work has been done, particularly at the North State laboratory at Chicago, at the East State laboratory at Urbana, and at the West State laboratory at Galesburg. The East State laboratory at Urbana has handled 800 specimens—704 for the diagnosis of diphtheria, 47 for the diagnosis of typhoid fever, 28 for the diagnosis of syphilis, 16 for the diagnosis of gonorrhea, 5 for the diagnosis of meningitis and two for the diagnosis of tuberculosis. The West State laboratory at Galesburg, which was not established until December, 1918, handled 417 specimens, 274 of which were for the diagnosis of typhoid fever, and 143 for the diagnosis of diphtheria. The North West State laboratory located at Rockford, and which has not been in operation since December 31, 1918, handled 111 specimens, 85 of which were for the diagnosis of diphtheria, 14 for the diagnosis of meningitis, and 12 for the diagnosis of gonorrhea. The South State laboratory located at Mount Vernon has handled 27 specimens, 26 of which were for the diagnosis of diphtheria and 1 for the diagnosis of typhoid fever.

## PRODUCTION OF BIOLOGICAL PRODUCTS

At the outbreak of the war, preparations had been made for the production of certain preventive and curative vaccines and other biological products, particularly for the use of the various State institutions and for the several divisions of the State Department of Public Health, although it is appreciated that such products could not be manufactured in any considerable quantities without additional appropriations and additional personnel.

The disturbance of the personnel of the division, incidental to the war, delayed this new activity, but during the latter part of the fiscal year plans were made for the development of a new Division of Research and Biological Laboratories in which new work could be extended and developed, and appropriations were requested of the Fifty-first General Assembly for this purpose.

While the State Department of Public Health is now in position to produce certain biologic products at a very material saving to the State and to the people, the work has been delayed partly on account of the difficulty in securing suitable laboratory equipment, but largely on account of the resignation of the acting chief of the division, and inability to secure thoroughly competent technical workers.

It is expected that early in 1920, a Division of Research and Biological Laboratories will be thoroughly established along the lines previously proposed.

#### LABORATORY QUARTERS

The Division of Diagnostic Laboratories is more or less handicapped by the inadequacy of its present quarters. The division occupies rooms on the top floor of the north wing of the State House, sharing these rooms with the laboratories of the Division of Sanitation. In three relatively small rooms, whose lightning and ventilation are not satisfactory, the division is required to handle large quantities of materials for distribution throughout the State making necessary rather extensive laboratory records, in addition to the actual performance of its duties with the handling and cleansing of laboratory materials, and the housing of guinea pigs, rabbits and other necessary animals. Were these quarters reserved for the exclusive use of the division, they would still be inadequate, but used as they are for the joint purposes of diagnostic laboratories and the laboratories of the Division of Sanitation, the quarters are so cramped and inconvenient, as to seriously impair the efficiency of both divisions.



## DIVISION OF HOTEL AND LODGING HOUSE INSPECTION

W. W. McCULLOCH, *Superintendent*

The Division of Hotel and Lodging House Inspection of the State Department of Public Health was created by a special law and given jurisdiction over the cubic foot of air space and certain other sanitary features of lodging houses, boarding houses, taverns, inns and hotels in cities of 100,000 population or over. This provision of the law confines the activities to the city of Chicago, and on this account the division maintains offices at 130 North Wells Street, Chicago, from which all of its activities are carried out.

During the fiscal year ending June 30, 1919, there were 515 hotels and lodging houses inspected and measured and 335 reinspected and re-measured. The number of rooms in these lodging houses and hotels was 15,058, affording accommodations for 19,837 lodgers and a maximum legal capacity of 38,851. The total number of lodgers at the time of inspection was 10,919.

During the year there were 1,735 supplementary inspections of hotels and lodging houses, the results of which are shown in the table presented herewith:

	Measured.	Remeasured.
July, 1918.....	38	95
August, 1918.....	30	62
September, 1918.....	16	70
October, 1918.....	84	16
November, 1918.....	141	36
December, 1918.....	47	5
January, 1919.....		
February, 1919.....		
March, 1919.....	25	6
April, 1919.....	21	3
May, 1919.....	49	4
June, 1919.....	64	38
Total.....	515	335

Table showing supplemental inspections of hotels and lodging houses for fiscal year July 1, 1918, to June 30, 1919:

	Supplemental inspections.	Rooms.	Lodgers.	Present capacity.
July, 1918.....	292	5,657	3,850	7,472
August, 1918.....	496	13,984	8,638	179,714
September, 1918.....	384	7,029	4,615	8,835
October, 1918.....	75	1,105	874	1,415
November, 1918.....	79	1,310	1,131	1,802
December, 1918.....	63	1,620	1,199	2,441
January, 1919.....	1	14	12	18
February, 1919.....	1	6	8	12
March, 1919.....	164	2,727	2,358	3,582
April, 1919.....	12	141	139	215
May, 1919.....	50	926	613	1,294
June, 1919.....	118	1,685	1,172	2,142
Total.....	1,735	36,204	24,609	208,942

During January and February, 1919, the inspectors for the division served notices upon proprietors, managers or clerks of 5,482 lodging houses and hotels, notifying the manager to file a sworn statement with the county clerk as required by law, to be filed by March 1, of each year. At the time the notices were served there were found to be 9,458 lodgers in these establishments.

The records of the division on April 1, 1919, show that there were 2,402 boarding houses, lodging houses, and hotels that had failed to comply with the law in regard to filing complaints. The inspectors were consequently assigned to the serving of written notices on proprietors, managers and clerks of these delinquent establishments directing them to file statement within three days after notice. The total number of statements filed with the county clerk during 1919 was 4,693. Copies of these statements have been made and have been filed and made a part of the records of the division.

During the fiscal year 962 hotels and lodging houses were found to have gone out of business. Of these 734 had vacated the premises probably for removal elsewhere, 192 known to have gone definitely out of business, and in thirty-six instances, the buildings have been torn down.

During the past year there has been an increasing tendency toward overcrowding, particularly among the smaller hotels and lodging houses. Whenever such instances are found, notice is given to immediately remove excess beds in compliance with section 16 of the law regulating the number of beds in each sleeping room. In every instance the regular second visit of inspection has shown that this provision of the law has been complied with.

#### INFLUENZA EPIDEMIC

In addition to the ordinary duties and activities of the Division of Hotel and Lodging House Inspection which are constantly increasing with the continued growth of the city, special demands were made upon

the division during the autumn of 1918 when the epidemic of influenza was prevalent in the city of Chicago. On instructions received from the Director of the State Department of Public Health, inspectors for the division visited 2,493 lodging houses and hotels, in which 46,801 lodgers were accommodated, securing information as to the existence of any known or suspected cases of influenza or pneumonia among the lodgers, and distributing large numbers of copies of the circular on "Suggestions on the Cause and Prevention of Influenza," and copies of the rules and regulations of the department for the control of this disease.

The information elicited through this inspection was tabulated at the end of each working day and transmitted early the following morning to temporary offices of the State Department of Public Health, then maintained at the Hotel Sherman.

It is believed that the service the division was enabled to render during this epidemic was instrumental to a certain extent, in controlling influenza in the lodging house population, which is more or less migratory in character and which is controlled through the ordinary health agencies with considerable difficulty. The familiarity of the division with all of the existing lodging houses and hotels and the personal acquaintance with the owners and managers of these establishments, permitted the division to obtain accurate information at all times and to place this information immediately in the hands of the Director of Public Health who in turn was enabled to transmit it to the local health authorities of the city of Chicago.

## DIVISION OF SOCIAL HYGIENE

G. G. TAYLOR, M. D. *Acting Chief*

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The Division of Social Hygiene of the State Department of Public Health is a new division, the necessity for which was made apparent through war-time experience. The division is financed jointly by the United States Government and the State of Illinois, Federal appropriations for this purpose being made under the Chamberlain-Kahn amendment to the Army Appropriation Act passed by the Sixty-fifth Congress.

While the division was officially created on July 1, 1918, funds were not available until November 1 of that year. Since the creation of the division had not been anticipated at the time of meeting of the Fiftieth General Assembly, no appropriations had been made for it and no moneys of any kind could be obtained until they were available from the Federal Government. On November 1, 1918, the State Department of Public Health received the sum of \$61,307.51 to carry on the work of the division until the next biennial session of the Illinois General Assembly. In the appropriations made by the Fifty-first General Assembly, a sum of \$50,000 was set aside for the uses of this division, and a like amount was consequently contributed by the United States Government under the provisions of the Chamberlain-Kahn amendment.

The need for a Division of Social Hygiene, for the prevention and suppression and control of venereal diseases, was made apparent very early in our participation in the war when it was found, upon the examination of men called for military duty, a large percentage suffered from venereal diseases. Of the second million drafted men, 4.96 per cent were found to be diseased at the time of their arrival at camp, and of the men called from one particular city in Illinois 22.7 per cent were found to be suffering from syphilis, gonorrhea or chancroid.

The activities of the Division of Social Hygiene are divided into (1) The treatment of the disease, (2) Repressive action and (3) Educational work and this report is divided under these general heads.

### I. TREATMENT

Careful investigation has shown that only about forty per cent of persons infected with venereal diseases in Illinois have been receiving proper treatment at the hands of competent medical men. The remainder have been largely self-treated with patent medicines or with prescriptions passed from one patient to another. In most instances all treatment has been altogether discontinued upon the subsidence of acute



symptoms, and uncured individuals have continued to be disease-carriers and disease-spreaders throughout indefinite periods of time.

The average physician, especially in the smaller communities, is reluctant to treat patients suffering from venereal disease, both on account of lack of time to give proper treatment and on account of the disfavor with which this line of practice is still regarded in many communities. The average patient suffering from venereal disease cannot afford the services of the reputable specialist.

In view of these facts, venereal disease clinics have become an absolute necessity if these diseases are to be successfully combatted, and since these patients are a menace not only to the people of their own community, but to the citizens of the State and Nation it has been deemed proper that the cost of operation of these clinics shall be met by city, county, State and Nation. The Division of Social Hygiene, financed jointly by the State and Federal Governments, contributes toward the support of the venereal disease clinics organized and operated under its supervision. The following clinics have been established and are now in successful operation:

*East St. Louis.*—Operated by the Division of Social Hygiene of the State Department of Public Health, in conjunction with the city health department of East St. Louis; dispensary located in city hall.

*Rockford.*—Dispensary operated by the city of Rockford, 120 South Wyman Street.

*Decatur.*—Dispensary operated by the city of Decatur and Macon County and located in the Decatur and Macon County Hospital.

*Springfield.*—Dispensary operated by Sangamon County and located in St. John's Hospital.

*Chicago.*—Dispensary located at Central Free Dispensary of the Rush Medical College, 118 West Grand Avenue, in connection with the Illinois Social Hygiene League.

Plans have been prepared for the establishment of a clinic at West Hammond, Illinois, to be operated by the city of Hammond under the joint supervision of the State Health Departments of Illinois and Indiana.

Within a short time five approved clinics will be opened by the health department of the city of Chicago and will be located at the Racine Avenue Dispensary, 1215 Racine Avenue; Sedgwick Dispensary, 1367 Sedgwick Street; South Side Dispensary, 2950 Calumet Avenue; Grand Crossing, 1000 East Seventy-fifth Street, and the Stock Yards Dispensary, 738 East Forty-seventh Street.

At least five additional clinics will be required to properly care for venereal cases in the State, and this number of clinics will be opened within the next few months.

As a result of about eight months of work in the development of clinical service, the following has been accomplished:

## CLINIC SUMMARY

Clinics in operation July 1, 1919.....	6
Monthly cost—Operating.....	\$2,070.00
Paid by division.....	\$1,035.00
Paid locally.....	\$1,035.00
Cases treated.....	3,923
Number of treatments given.....	9,304
Number of patients discharged as cured.....	172
Number doses arsphenamine administered.....	2,520

In addition to the administration of specific treatment, in the clinics conducted under the auspices of the Division of Social Hygiene, arsphenamine is being supplied without cost to the overseers of the poor in the various counties for the treatment of indigent patients by physicians who agree to administer it without cost to the division. In carrying out this plan 4,365 ampules of arsphenamine have been distributed.

As shown in the report of the Division of Communicable Diseases, there were 16,915 cases of venereal diseases reported by physicians and druggists up to June 30, 1919, an average of 1,409 cases per month, and it is confidently expected that this number will be increased to three or four thousand cases per month during the coming year, as the result of a comprehensive educational campaign.

## REPRESSING ACTIVITIES

Since prostitution is the most prolific source of venereal diseases, the control and repression of prostitution has become an important and a difficult part of the work of the division.

During the last few months of the war, the division joined with the Federal authorities in cleaning up the cities located within five miles of military camps and cantonments. In this work the division worked in close cooperation with the United States Marshals, and in close touch with the Federal Courts. All known prostitutes were apprehended and subjected to rigid examination, and, if infected, were placed in hospitals at county expense until it was demonstrated that they were not longer capable of transmitting infection. In dealing with this problem in the five military zones, an effort was made to avoid the custom commonly pursued of merely driving these unfortunate women out of one community to become sources of infection in another, it being realized that in a Nation drawing its military forces from the young men of all communities that the governmental preventive function was not completely carried out in merely throwing protection about the organized military establishment.

Since the signing of the Armistice in November, there has been a tendency in many cities to relax the activities which had been directed against the social evil as a war measure, and to relax into the former state of disregard concerning commercialized vice. Whatever may be said in regard to the segregation of vice, the fact has been clearly established in the United States that segregation does not completely segregate and not only renders social vice more easily accessible to boys and young men, but has the effect of practically licensing the social evil.

While it is not within the province of health officials to dictate to citizens as to their moral conduct, it is a part of their duty to employ all legitimate means to prevent the spread of disease and to remove every possible source of infection. With this object in view forty Illinois cities have been investigated and reports on vice conditions have been made to local officials. On account of the fact that in many of these communities no real health organization is maintained, it has become necessary that many sources of infection be followed up and located by representatives of the Division of Social Hygiene in order that infected individuals may be placed under treatment. This work is now being carried out by the division.

#### EDUCATIONAL WORK

Ignorance and misconception as to the seriousness and far-reaching consequences of venereal diseases, is evidently responsible for their very great prevalence. The idea that these diseases are of minor consequence is doubtless responsible for the disposition on the part of officials and of the public to wink at prostitution.

In addition to this, however, the natural disinclination to discuss the unpleasant and unclean, coupled with the embarrassment which attends any public mention of matters bearing on the sex relation, has been a most important factor in the spread of venereal diseases.

The erroneous idea that gonorrhea is easily cured by self-treatment or the administration of patent medicines is responsible for the fact that less than half the sufferers from this disease ever consult a physician.

It has come to be recognized that the public must be given reliable information concerning the hygiene of the sex organs, their proper use, their abuse, the diseases which affect them, how to avoid such diseases, and when contracted the necessity for prompt and efficient treatment.

The introduction of sex education into public schools and high schools is a matter for serious consideration and much serious preparation before it is attempted. We are not prepared for it at this time. Sex instruction must reach boys and girls through their parents and the chief aim of any intelligent educational system at the present time must be the teaching of parents how to impart this information.

Under the direction of the Division of Social Hygiene, lectures are being delivered by women physicians of wide experience to audiences of women, and by men physicians to audiences of men. Short noon-day talks are made in industrial plants to men and women who appear to be hungry for information. There have been two hundred eighty-four such lectures with an average attendance of one hundred persons.

Pamphlets have been prepared for the instruction of the public, the parents, young men and women, young boys and girls, and educators. That there is a real need for this information is evidenced by the fact that three hundred seventy thousand (370,000) of these pamphlets have been distributed in response to requests.

Motion picture films have been prepared and are being accepted throughout the State. Chart and panel exhibits are being shown at county fairs and at other public gatherings. Stereomograph and lantern slides are being shown to large audiences. A "Keeping Fit" exhibit has been prepared and will be shown to high school boys and young men.

The following is a summary of the educational work accomplished during the eight months of the fiscal year ending June 30, 1919:

#### EDUCATIONAL SUMMARY

Number of lectures given.....	284
Average attendance.....	100
Number of slide showings made.....	14
Average attendance.....	100
Number of school charts (Keeping Fit) exhibited.....	35
Average attendance.....	50
Number of placards distributed.....	1,500
Number of pamphlets distributed.....	370,000
Number of showings of motion pictures.....	250
Average attendance.....	150
Number of organizations and profession circularized.....	12

Of a special interest in connection with the educational work are the lectures delivered to the men and women employees of Montgomery Ward Company; the Argo Corn Starch Company; the Sherwin-Williams Paint Company; the Hub Clothing Company; Rothschild and Company; the Addressograph Company; the Pullman Car Works, and the men of the police department, all of the city of Chicago.



## DIVISION OF PUBLIC HEALTH INSTRUCTION

SAMUEL W. KESSINGER, *Acting Chief*

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The Division of Public Health Instruction is devoted to the various phases of publicity and education incidental to the activities of the State Department of Public Health. In a general way, the work of the division is divided into two classes, (a) general public health education by means of circulars, pamphlets, cartoons, stereopticons and motion pictures, exhibits and other educational material; (b) the preparation and editing of bulletins, rules and regulations, public pronouncements and technical literature, the original text for which is provided by the various divisions of the department.

### ORDINARY ACTIVITIES

The ordinary activities of the division were outlined in detail in the annual report for the year ending June 30, 1918. These activities have been continued and extended during the past year, and new features to retain and attract popular interest have been added from time to time.

The popular health magazine issued by the department known as "Illinois Health News," has been issued regularly for free distribution among physicians, health officers and interested laymen throughout the State, and has now attained a regular circulation of 10,000 copies. In connection with Illinois Health News there have been issued each month two striking cartoons which have later been enlarged and generally employed as educational exhibit charts. Electrotypes have also been made from the original etchings of these cartoons and have been furnished without cost to newspapers, medical journals and other publications, not only in Illinois but in surrounding states. This Illinois Health Cartoon series, now numbering considerably over 100 cartoons, is one of the most noteworthy collections of its kind extant and has had a very genuine value in impressing important facts in regard to health promotion and disease prevention upon those persons not sufficiently interested to read public health articles, but who are attracted by a striking illustration.

The press service of the division, reaching practically all of the newspapers in the State, has received more attention than in years past. a great many of the more prominent newspapers publishing the material furnished by the division as a regular feature. Weekly reports of the

prevalence of communicable disease in all sections of the State, such as are furnished by the Division of Communicable Diseases to the United States Public Health Service, appear in a large number of different publications.

#### HEALTH PROMOTION WEEK

In the field of public health education the most important event of the fiscal year was the observance of Health Promotion Week, a week in May designated by a joint resolution of the House and Senate to be devoted to all manner of activities contemplated to prevent or suppress disease and to promote the health and physical welfare of the people. The success of this great health demonstration was noted with interest throughout all parts of the United States, and stands as a conspicuous illustration, first, of the newly awakened interest of the entire people in the question of health conservation, and second, as an example of the active cooperation between governmental and extra-governmental agencies attained in Illinois through the liberal policies of the past few years.

Upon the recommendation of the Director of the State Department of Public Health and with the cordial approval of Governor Frank O. Lowden and leading members of both Houses of the Fifty-first General Assembly, the following joint resolution was passed by the House of Representatives on March 26, 1919, and was concurred in by the Senate on March 27 without a dissenting vote:

"WHEREAS, More than twenty-four thousand men, women and children in the State of Illinois died of communicable diseases during the past fiscal year; and

"WHEREAS, More than eighty-three thousand cases of communicable diseases were reported during the past fiscal year to the Department of Public Health; and

"WHEREAS, It is conservatively estimated that in Illinois the annual cost of diseases which are communicable, and therefore preventable, is upwards of one hundred fifty-five million dollars (\$155,000,000); now, therefore

*"Be it Resolved by the House of Representatives, the Senate concurring therein.* That the week beginning the second Sunday in May, 1919, and 1920, is hereby designated as Health Promotion Week throughout the State of Illinois; and, be it further

*"Resolved,* That the Fifty-first General Assembly hereby recommends to the people of Illinois that during the week thus designated, they shall emphasize in every possible way the need for united action against all communicable diseases and the cause thereof; and, be it further

*"Resolved,* That the Department of Health shall be and is hereby designated as the agency through which the programs and activities of the people during said Health Promotion Week shall be carried out."

It was decided: "No special appropriation will be asked of the State in order to carry this program through successfully. With the assistance which can be given the State Department of Health by the Illinois Tuberculosis Association and similar organizations, the expenses incident to the organization work, publicity, etc., can be completely covered."

The general plan of Health Promotion Week was presented to the executive heads of a number of public health, social welfare, civic and commercial organizations at a meeting held at the Leland Hotel on April 3, and a State committee was created to have charge of the Health Promotion Week activities. Of this committee Governor Frank O. Lowden was honorary chairman, Dr. C. St. Clair Drake, Director of the Department of Public Health was chairman, and Walter D. Thurber, executive secretary of the Illinois Tuberculosis Association, whose services were loaned to the State Department of Public Health for that purpose, was designated director general or executive officer. The general committee was made up of the following persons:

Dr. George Thos. Palmer, President, Illinois Tuberculosis Association.  
 Francis G. Blair, Superintendent, Department of Public Instruction.  
 Miss Jessie Spafford, President, Illinois Federation of Women's Clubs.  
 Charles Adkins, Director, State Department of Agriculture.  
 Charles G. Thorne, Director, State Department of Public Welfare.  
 John Glenn, Secretary, Illinois Manufacturers' Association.  
 Miss Dorothy Blatchford, Secretary, Illinois Society for Prevention of Blindness.  
 Mrs. Joseph T. Bowen, State Chairman, Women's Committee, Council of National Defense.  
 Mrs. Ira Couch Wood, Director, Elizabeth McCormick Memorial Fund.  
 W. F. Calhoun, Commander, Illinois Branch of Grand Army of the Republic.  
 Dr. E. W. Fiegenbaum, President, Illinois State Medical Society.

Barney Cohen, Director, State Department of Labor.  
 Dr. John A. Robison, President, Illinois Public Health and Welfare Association.  
 Mrs. Harry Fleming, President, Illinois Congress and Parent-Teachers' Association.  
 Francis W. Shepardson, Director, State Department of Registration and Education.  
 Duncan McDonald, President, State Federation of Labor.  
 S. P. Preston, President, Illinois Press Association.  
 Joseph C. Thompson, Director, Department of Mines and Minerals.  
 Miss Helena McMillan, President, Illinois State Nursing Association.  
 Elmer M. Lawson, Department Commander, Spanish War Veterans.  
 J. W. Dappert, President, Illinois Society of Engineers.  
 H. L. Williamson, Secretary, Illinois Press Association.

The interest manifested by the various State-wide organizations in this original and ambitious health program was quite unusual, and from the date of beginning organization until the program of Health Promotion Week was completed there were more different organizations throughout Illinois concentrating their thought and activity upon the conservation of health than ever before in this State, and probably ever before in the history of the Nation.

Headquarters were established in the offices of the State Department of Public Health and in other space in the State House provided by the Secretary of State, and there was begun at once an intensive campaign of education to secure the observance of Health Promotion Week in every county, city and community in Illinois and enlisting the interest and cooperation of public officials, school authorities, health officers, physicians, women's clubs, civic associations, merchants, editors, labor organizations and all classes of public spirited persons.

#### THE GENERAL PLAN

In the general program for the week, which was carefully elaborated after consultation with all interested agencies, it was the aim to lay

stress on a new "statement of faith" representing modern thought in preventive medicine; "that while disease suppression is important, and disease prevention likewise important, health promotion stands out infinitely more important than either or both of these." The entire program for the week was so arranged and directed as to concentrate the thought and attention of all of the people of the State of Illinois upon the value of good health and the practical value of physical efficiency.

The following program was recommended for adoption in all communities, and incidentally was carried out with singular uniformity:

*Sunday—May 11.*—Health promotion and disease prevention talks in all churches by ministers and other members of Health Promotion Week committees.

*Monday—May 12.*—Community "clean-up" day; citizens remove all rubbish from cellar to attic and either burn it or pile it in alley or street for the street cleaning department or garbage removal wagons. Yards to be raked and the rubbish assembled in pile for burning or removal. It may be necessary for the local authorities to increase their facilities for removing garbage and rubbish during this period.

*Tuesday—May 13.*—"Swat the Fly Before He Starts" day. Committee workers under the direction of the local health authorities on this day should visit all places which offer opportunities as breeding spots for flies and other disease carrying insects and clean them up by spraying, by draining or in other approved ways.

*Wednesday—May 14.*—"Better Babies" day. Headquarters for the weighing, measuring and scoring of all babies should be established under the direction of the committee in charge of this phase of Health Promotion Week. Printed matter for mothers and prospective mothers should be systematically distributed.

*Thursday—May 15.*—"Medical Examination" day. All citizens who have not recently undergone a thorough medical examination should make it a point to do so on this day. In the early spring, the successful farmer carefully examines all of his implements and farm machinery to see that they are in good working order. Many of us have come to realize the necessity for periodical examination of our teeth in order to avoid toothache and other trouble. The human body is the most finely adjusted piece of machinery in the world. Serious illness can often be avoided if detected early through a careful medical examination.

*Friday—May 16.*—"America's Future Citizens" day. Special programs, exercises or talks in every school room; blackboard drawings, exhibits or other matter should be used to illustrate these talks, exercises or programs. Many schools will decide to stage health playlets or to have contests in composition writing. It should be borne in mind by all Health Promotion Week committees that the future of the country lies in the health of its children and that good health habits are as easy to form as other habits which are detrimental to health.



*Saturday—May 17.*—"Pageant" day. This occasion offers the opportunity for the most striking unique pageant ever held in your community. A reviewing stand should be designated for the use of military and civil authorities. Floats typifying the many interesting points in the promotion of health and the prevention of disease should be entered in the pageant by the board of health, by civic organizations interested in any phase of public health, social welfare or home service work as well as by commercial concerns dealing in any article useful in conserving health or in the prevention of disease. School children should form an important section of the pageant, local military or semi-military organizations should have "the right of line"; G. A. R. veterans and soldiers who have returned from Europe should be given positions of honor. Private autos should be attractively decorated and entered in the pageant.

#### EXTENSION WORK

With headquarters established and with the program adopted, the State was divided into twelve districts to each of which was assigned a field worker from a staff created from the personnel of the State Department of Public Health, from the Illinois Tuberculosis Association, and from the State Department of Labor. These field workers travelled continuously through their individual districts, creating the organization and setting up the machinery for community observance of the week.

In the meantime, the executive office at Springfield was engaged in continuous correspondence with local organizations, sending out fifty thousand pieces of literature on health subjects, one hundred and fifty sets of posters on the prevention of blindness, supplying communities with blue-prints of designs for the construction of floats for health pageants, supplying health exhibit material, motion pictures and stereopticon slides, arranging the assignment of speakers on all phases of public health and otherwise stimulating local activity. During this preliminary campaign over 30,000 personal letters were written and approximately 16,000 pieces of news and feature material, while the Illinois State Press Association, through its president, Mr. S. P. Preston, and its secretary, Mr. H. L. Williamson, arranged for the publication of continuous information of educational material in 798 daily and weekly newspapers throughout the State.

As a result of this educational program 797 Illinois communities created Health Promotion Week committees with a total number of 10,642 persons in their membership actively engaged in carrying out the program.

Of these 797 communities 182 carried out the week's program in all of its essential features and it is estimated that at least twenty thousand adults and 500,000 school children actively participated in the work.

## GENERAL RESULTS

It is obviously impossible to determine the practical and direct results of this great State-wide health demonstration, but the extent of observance of the week throughout Illinois may be intelligently estimated from the following facts based upon definite reports received by the State Department of Public Health:

## OBSERVANCE OF HEALTH PROMOTION WEEK

Total number of local organizations.....	797
Total number of local community members.....	10,642
Total number of churches observing health promotion Sunday.....	697
Total number of health sermons preached by pastors.....	492
Total number of health talks given in churches by laymen.....	167
Total church attendance at health meetings.....	89,920
Total health exhibit audiences.....	17,128
Total attendance at other health meetings.....	2,601
Pieces of health literature distributed.....	627,424
Communities conducting health essay contest in schools.....	51
Communities observing Health Promotion Week in schools.....	61
Number of blocks cleansed in community clean-up.....	14,148
Wagon loads of rubbish removed.....	16,873
Communities conducting fly catching contests.....	10
Communities conducting rat catching contests.....	16
Communities conducting mosquito elimination.....	46
Communities observing medical examination day.....	59
Communities conducting better babies contest.....	590
Number of babies in better babies contests.....	7,930
Communities in which privies were fly-proofed.....	181
Communities conducting public health pageants or parades.....	29
Number of floats in health pageants.....	392
Number of decorated cars in health pageants.....	289
Number of school children in pageants.....	16,255
Attendance at final mass meetings.....	21,434
Communities in which merchants had health window displays.....	79
Estimated number of people reached directly by health week activities.....	1,576,517
Number of persons reached indirectly by health week activities.....	3,913,609
Communities conducting milk and water examinations.....	32

The cost of this campaign to the State Department of Public Health to the cooperating extra-governmental health organizations, and to etc., amounted to less than \$8,500, and it is believed that no similar expenditure for health promotion or disease prevention has been so far-reaching in its immediate and remote effects and influence.

Special credit for the success of this great enterprise is due to the large number of cooperating agencies and especially to the Illinois Tuberculosis Association, which not only contributed the services of its executive secretary as director of the enterprise, but loaned freely the services of its staff and the majority of its executive office.

Under the provisions of the joint resolution through which Health Promotion Week was observed in 1919, there is to be a similar observance in 1920, and it is expected that at that time health activities will be carried out in a much larger number of communities than during the first year.

# THE DEPARTMENT OF PUBLIC HEALTH

Account.	Entire appropriation for biennium July 1, 1917, to June 30, 1919.	Bills paid.	Amount lapsed September 30, 1919.
<b>GENERAL OFFICE.</b>			
Salary and wages.....	\$21,000	\$19,334	\$1,666
Salary and wages from contingent.....		c 1,048	
Office expense.....	4,651	4,171	480
Office expense from contingent.....		c 1,495	
Traveling expense.....	9,600	3,754	5,846
Operating supplies and expenses.....	450	235	215
Operating supplies and expenses from contingent.....		c 106	
Repairs.....	550	548	2
Equipment.....	4,067	3,819	248
Equipment from contingent.....		c 201	
Contingent.....	3,047	*(2,850)	197
Total.....	\$43,365	\$34,711	\$8,654
<b>COMMUNICABLE DISEASES.</b>			
Salary and wages.....	\$52,040	\$49,682	\$2,358
Salary and wages from contingent.....		c 14,937	
Office expense.....	5,350	5,036	314
Office expense from contingent.....		c 213	
Traveling expense.....	33,000	30,295	2,705
Operative Supplies and expenses.....	86,080	84,064	2,016
Operating supplies and expenses from contingent.....		c 14,539	
Repairs.....	135	61	74
Equipment.....	905	779	126
Contingent.....	32,152	*(29,694)	2,458
Total.....	\$209,662	\$199,611	\$10,051
<b>TUBERCULOSIS.</b>			
Salary and wages.....	\$5,600	\$5,600	
Office expense.....	720	658	\$ 62
Traveling expense.....	4,600	2,778	1,822
Operating supplies and expenses.....	40		40
Repairs.....	15		15
Equipment.....	135	41	94
Contingent.....	615		615
Total.....	\$11,725	\$9,077	\$2,648
<b>SANITATION.</b>			
Salary and wages.....	\$33,400	\$27,359	\$6,041
Salary and wages from contingent.....		c 1,458	
Office expense.....	2,525	1,573	952
Office expense from contingent.....		c 20	
Traveling expense.....	17,500	8,083	9,417
Operating supplies and expenses.....	1,320	973	357
Operating supplies and expenses from contingent.....		c 139	
Repairs.....	105	55	50
Repairs from contingent.....		c 630	
Equipment.....	3,020	2,796	224
Contingent.....	8,683	*(2,247)	6,436
Total.....	\$66,563	\$43,086	\$23,477
<b>DIAGNOSTIC LABORATORY.</b>			
Salary and wages.....	\$ 9,960	\$8,335	\$1,625
Salary and wages from contingent.....		c 832	
Office expense.....	1,075	485	590
Office expense from contingent.....		c 19	
Traveling expense.....	1,400	318	1,082
Operating supplies and expenses.....	14,050	7,153	6,897
Repairs.....	100	85	15
Equipment.....	993	907	86
Equipment from contingent.....		c 2,760	
Contingent.....	1,375	*(3,611)	**—2,236
Total.....	\$28,953	\$20,894	\$8,059

## THE DEPARTMENT OF PUBLIC HEALTH—Concluded.

Account.	Entire appropriation for biennium July 1, 1917, to June 30, 1919.	Bills paid.	Amount lapsed September 30, 1919.
<b>VITAL STATISTICS.</b>			
Salary and wages.....	\$25,600	\$24,554	\$1,046
Salary and wages from contingent.....		c 6,718	
Office expense.....	4,595	3,711	884
Office expense from contingent.....		c 884	
Traveling expense.....	4,100	3,442	658
Operating supplies and expenses.....	150	103	47
Repairs.....	95	235	**—140
Equipment.....	1,555	1,619	**—64
Equipment from contingent.....		c 3	
Contingent.....	2,449	*(7,605)	**—5,156
Total.....	\$38,544	\$41,269	**—\$2,725
<b>LODGING HOUSE INSPECTION.</b>			
Salary and wages.....	\$17,400	\$14,841	\$2,559
Office expense.....	3,000	2,438	562
Office expense from contingent.....		c 50	
Traveling expense.....	600	177	423
Operating supplies and expenses.....	1,000	2	998
Repairs.....	400	75	325
Equipment.....	800	453	347
Contingent.....	1,200	*(50)	1,150
Total.....	\$24,400	\$18,036	\$6,364

## THE DEPARTMENT OF PUBLIC HEALTH

## RECAPITULATION

Account.	Entire appropriation for biennium July 1, 1917, to June 30, 1919.	Bills paid.	Amount lapsed September 30, 1919.
Salary and wages.....	\$165,000	\$149,705	\$15,295
Salary and wages from contingent.....		c 24,993	
Office expense.....	21,916	18,072	3,844
Office expense from contingent.....		c 2,686	
Traveling expense.....	70,800	48,847	21,953
Operating supplies and expense.....	103,100	92,530	10,570
Operating supplies and expense from contingent.....		c 14,784	
Repairs.....	1,400	1,059	341
Repairs from contingent.....		c 630	
Equipment.....	11,475	10,414	1,061
Equipment from contingent.....		c 2,964	
Contingent.....	49,521	*(46,057)	3,464
Total.....	\$423,212	\$366,684	\$56,528
Printing.....	20,000	19,997	3
Total.....	\$443,212	\$386,681	\$56,531

"c" Included in total.

\* Not included in total.

\*\* All appropriations, except Salaries and Wages, made to General Office of Department of Public Health. Items shown as appropriations are estimates only. Apparent deficits are overcome by amounts shown as lapsed in other divisions.



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1919-20

# THIRD ANNUAL REPORT

OF THE

## DEPARTMENT OF PUBLIC HEALTH

Illinois

July 1, 1919

TO

June 30, 1920



DR. C. ST. CLAIR DRAKE, Director



THIRD ANNUAL REPORT

OF THE

DEPARTMENT OF PUBLIC HEALTH

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July 1, 1919

TO

June 30, 1920

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DR. C. ST. CLAIR DRAKE, Director



ILLINOIS STATE JOURNAL CO.  
SPRINGFIELD, ILLINOIS  
STATE PRINTERS  
1921

43709—500



## LETTER OF TRANSMITTAL

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*To the Governor:*

In compliance with the provisions of the Civil Administrative Code, I have the honor to submit to you the accompanying report of the Department of Public Health for the fiscal year, July 1, 1919, to June 30, 1920. The report covers briefly the activities of the various divisions of the department during the fiscal period.

Respectfully submitted,

C. ST. CLAIR DRAKE, M. D.



STATE OF ILLINOIS  
**THE DEPARTMENT OF PUBLIC HEALTH**

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C. ST. CLAIR DRAKE, M. D., *Director*

GEORGE T. PALMER, M. D., *Assistant Director*

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DIVISION OF COMMUNICABLE DISEASES

JOHN J. MCSHANE, M. D., DR. P. H., *Chief*

DIVISION OF TUBERCULOSIS

GEORGE T. PALMER, M. D., *Acting Chief*

DIVISION OF SANITATION

PAUL HANSEN, *Chief*<sup>1</sup> *Sanitary Engineer*  
HARRY F. FERGUSON, *Acting Chief Engineer*

DIVISION OF VITAL STATISTICS

SHELDON L. HOWARD, *Registrar of Vital Statistics*

DIVISION OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

C. W. EAST, M. D., *Acting Chief*

DIVISION OF SURVEYS AND RURAL HYGIENE

PAUL L. SKOOG, *Supervisor of Surveys*<sup>2</sup>  
BAXTER K. RICHARDSON, *Acting Supervisor*

DIVISION OF DIAGNOSTIC LABORATORIES

THOMAS G. HULL, PH. D., M. S., *Chief Bacteriologist*

DIVISION OF HOTEL AND LODGING HOUSE INSPECTION

W. W. McCULLOUGH, *Superintendent*

DIVISION OF PUBLIC HEALTH INSTRUCTION

SAMUEL W. KESSINGER, *Acting Chief*

DIVISION OF SOCIAL HYGIENE

G. G. TAYLOR, M. D., *Chief*

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<sup>1</sup> Resigned—May 15, 1920.

<sup>2</sup> Resigned—January 1, 1920.





## THE DEPARTMENT OF PUBLIC HEALTH

C. ST. CLAIR DRAKE, M. D., *Director*

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During the fiscal year, July 1, 1919, to June 30, 1920, the State Department of Public Health has become firmly established on a post-war basis. During the two previous fiscal years, matters having to do with the protection of the military population in the several camps and cantonments located in Illinois, the policing of zones surrounding these cantonments and other activities intimately associated with the war engaged a large part of the attention of the various divisions of the department. During these two previous years the personnel of the department, particularly those engaged in the more technical branches, was seriously disturbed on account of the fact that many of the department's technicians engaged in military service. During the past fiscal year the old-time personnel has been reestablished, and work has progressed on a peace-time basis.

In one particular, however, the influence of the war has been definitely felt during that year. Scales of salaries of every kind have been higher than at any time in the history of the department, and it has been found impossible to fill satisfactorily a number of positions created by the Fifty-first General Assembly at the salaries which seemed adequate at the time of the preparation of the biennial budget. For the same reason, there has been constant temptation for the older employees to give up positions in public service and to accept more lucrative positions outside.

The cost of travel, including railroad fares, sleeping car accommodations, hotels and all other factors, continued to increase steadily after the termination of the war, so that appropriations made during the session of the General Assembly early in 1919, which at that time appeared reasonably generous, have proven to be entirely inadequate, necessitating the curtailment of many activities of a progressive type which would have been very desirable.

This increase in costs has extended through every phase of government and, as these pages are written, in July, 1920, shows no tendency toward abatement.

This shrinkage in the productive worth of money has not necessitated the curtailment of any necessary activities, but has rendered impossible the progressive steps contemplated at the beginning of the biennium.

In the main, the general activities of the department during the past fiscal year have been directed upon the following lines:

(a) The completion of the organization of the department under the provisions of the Civil Administrative Code, and the re-establishment of personnel;

(b) The completion of agreements between the department and the various extra-governmental health agencies to prevent overlapping and duplication of effort and to secure complete coordination in all forms of health activity throughout Illinois;

(c) The development of a closer relationship between the department and the local health authorities throughout the State, based on a policy of maximum "home rule" in all of the various communities;

(d) The standardization of rules and regulations for the control of communicable diseases and the encouragement of the adoption of uniform sanitary and health ordinances and codes throughout the cities and villages of the State;

(e) The improvement in the methods of registration of vital statistics with the establishment of a better understanding between State, county and local registrars, with special educational activity to improve the registration of births so that the State may be recognized as a complete registration State;

(f) Meeting and combatting the influenza-pneumonia epidemic of the winter of 1919-1920;

(g) The development of new health activities proven desirable by war-time experience and by the experiences of other State health organizations.

#### I. DEVELOPMENT OF DEPARTMENTAL ORGANIZATION

During the fiscal year the Department of Public Health carried out its activities through the following twelve divisions:

Executive Division;

Division of Communicable Diseases;

Division of Tuberculosis;

Division of Sanitation;

Division of Vital Statistics;

Division of Child Hygiene and Public Health Nursing;

Division of Diagnostic Laboratories;

Division of Biological and Research Laboratories;

Division of Surveys and Rural Sanitation;

Division of Public Health Instruction;

Division of Social Hygiene;

Division of Lodging House Inspection.

In the experiences of the past three years, since the adoption of the Civil Administrative Code, this form of departmental organization has

proven entirely satisfactory. Several of these divisions—those carrying out the basic or fundamental activities of the department—have been completely organized and have had a reasonably adequate personnel. On account of the limited appropriations made by the last General Assembly, however, and the necessity for unusual economy due to the excessive cost of government, several of the divisions have remained in more or less skeleton form, their functions, however, being performed with reasonable efficiency either by their limited staffs or through cooperation with other divisions.

It is to be hoped that the Fifty-second General Assembly will see the wisdom of making appropriations adequate to establish all of these twelve divisions on a permanent basis.

## II. COOPERATION OF GOVERNMENTAL AGENCIES

At the termination of the war a number of powerful volunteer organizations found themselves with large personnel and large resources, but without a definite future program. For a time it appeared that an unnecessary number of extra-governmental agencies proposed to engage in peace-time health work of one kind or another. As executive officer for the national organization of state health authorities, the Director of the Department of Health was instrumental in bringing about nation-wide agreements between the state health authorities, the American Red Cross, the National Tuberculosis Association and the National Organization for Public Health Nursing, and a clearer understanding between state health authorities and the American Public Health Association and the American Medical Association. These nation-wide agreements provided for definite cooperation between the Departments of Public Health of the individual states, and the state divisions of the national extra-governmental organizations.

During the past year the close cooperation between the Illinois Tuberculosis Association and the State Department of Health, which has prevailed in the past, has been continued with most satisfactory results and definite working agreements, particularly in the supervision of public health nursing, have been entered into between the Department of Health, the Illinois Tuberculosis Association and the Central Division of the American Red Cross in which the standards of nursing service of the National Organization for Public Health Nursing have been adopted for application to both governmental and extra-governmental nursing agencies.

With the passage of a reasonable amount of time necessary to readjustment, it is believed that all of the extra-governmental agencies desiring to do so may engage in local and state-wide health activity, but that there will no longer be the expensive duplication of effort, friction and controversy which a few months ago appeared to be inevitable.

In all of the agreements for cooperation between the state-wide governmental and extra-governmental agencies, the State Department

of Health has been recognized as a proper place of contact and as the proper coordinating agency, but a distinct effort has been made by the department to accord to the extra-governmental or volunteer agencies all of the freedom, initiative, latitude and authority consistent with the provisions of the Civil Administrative Code, and of other State laws.

It is to be hoped that this form of cooperation may be adopted locally in all of the cities and communities of the State, the local health department being the coordinating agency for all of the local health activities. This desired end cannot be accomplished, however, until all of the health jurisdictions in the State are efficiently organized with competent and responsible heads. It must be admitted with considerable regret that there are still many communities in the State where the local health departments are so inadequate, so poorly financed and so inefficiently directed, that it is impossible to induce the local extra-governmental agencies, some of which are strong and influential, to recognize or accept the leadership of the local health department.

### III. COOPERATION OF LOCAL HEALTH AUTHORITIES

During the past year the department has made a continuous and constant effort to establish the closest cooperation with local health authorities throughout the State. In extending its influence into the local communities, it has been made clear that it is the policy of the department to serve in an advisory and standardizing capacity and in no sense as a dictator of the details of local health organization or administration. It is believed that the adoption and promulgation of this policy has gone far toward establishing a closer relationship between local and State health authorities and will be more effective in the stimulation of efficient local health administration than any policy contemplating extension of power and authority by the State Department of Health in local affairs.

### IV. STANDARDIZATION OF RULES AND REGULATIONS

During the year, there has been a complete revision of all rules and regulations for the control of communicable diseases in harmony with prevailing scientific practice, and there has been a continuous effort to stimulate the adoption of local ordinances and health codes in harmony with these revised rules and regulations.

In many instances the department has furnished to municipalities model health codes through the adoption of which there will be uniformity of action in health matters in all parts of the State.

### V. IMPROVED VITAL STATISTICS

For many years Illinois remained one of the few major states in the Union unrecognized by the Federal Bureau of the Census as a registration State in vital statistics. On October 14, 1918, the Bureau of the Census recognized Illinois as a registration State for deaths, but up to



this time the reports of births have not been sufficiently complete to justify the Federal Government in the complete recognition of Illinois as a registration State.

During the past year every possible effort has been made to interest the medical profession, health authorities, civic organizations and the public as a whole, in the necessity for complete birth registration, with the result that the returns have materially improved. It is hoped that during the coming fiscal year birth reports will be sufficiently complete to warrant acceptance of Illinois in the registration area for both deaths and births.

Under the plan of birth and death registration effective in Illinois, it is contemplated that there shall be complete records in the hands of the State, county and local authorities. During the past year a method of cross checking has been adopted which for the first time guarantees the proper carrying out of this plan so that at the present time the birth and death records in the hands of local health authorities, county clerks and the State Department of Health, are complete for their several jurisdictions.

#### VI. INFLUENZA-PNEUMONIA EPIDEMIC 1919-1920

All of the resources of the department were thrown into the influenza epidemic, beginning late in 1919 and extending into the spring of 1920. This epidemic, while not as devastating and paralyzing as the epidemic of the previous year, was exceedingly serious in character. It is believed that the better facilities of the Department of Public Health and the preparation brought about in local communities at the instance of the department, saved many human lives and prevented a vast amount of human suffering, if they were not responsible for the decreased ravages as compared with the previous year.

#### VII. NEW HEALTH ACTIVITIES

Our experience in the World War and in the influenza-pneumonia epidemic of 1918-1919, indicated the need for a number of new health activities which had not been considered essential in years past. These new activities are dealt with in detail in the following pages, but may be briefly summarized as including improved methods in the handling of communicable diseases with an entirely new attitude toward influenza and pneumonia; new activities in the prevention and suppression of venereal diseases; the more general employment of public health nurses, both in local and State activities; the extension of diagnostic clinical service in cooperation with the medical profession; the more extensive production of preventive and curative vaccines, sera and other biological products; the establishment of a more intimate contact with the medical profession of various communities through the appointment of assistant collaborating epidemiologists in all of the counties of the State.

## EXECUTIVE DIVISION

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The Executive Division of the State Department of Public Health is made up of the director, assistant director, the chief clerk and a staff of accountants and clerks having to do with the coordination and general supervision of all of the activities of the several divisions. To this division the chiefs of all of the divisions make regular reports and in it general programs are outlined and the operation of the several divisions coordinated. The Executive Division is also the point of contact between the department and other State departments or offices, and the means of contact with all outside governmental and extra-governmental agencies.

In addition to the general executive supervision of the department carried out by the director, through this division, together with accounting, provision of supplies and other general activities, the director has given a large share of his time during the past fiscal year to the coordination of governmental and extra-governmental agencies on a nationwide basis.

The chief activities of the division may be generally classified: (a) placing the department on a post-war basis; (b) the development of cooperation between governmental and extra-governmental agencies; (c) special investigations including a study of invasion and prevention of bubonic plague; (d) the development of closer cooperation with the medical profession of the various counties of the State, through the State and county cooperating health service and the appointment of assistant epidemiologists in all counties; (e) general educational activities in conjunction with the Division of Public Health Instruction and (f) the expansion of diagnostic and clinical service.

The Executive Division has had to deal with the intricate problems of financing the department with appropriations made by the Fifty-first General Assembly which did not contemplate the radical increase in the cost of government. For the most part, the personnel of the various divisions has been reestablished on practically the same basis prevailing with the advent of the war, but a number of valuable employees have found it necessary to sever their relationship with the department because the department has found it impossible to meet the competitive financial offers of outside organizations. On the whole, however, all divisions have been efficiently manned and with a few exceptions, all of the contemplated activities of the department have been in operation.

With the termination of the war, it became imperative to coordinate and bring closely together the activities of the several strong and influential volunteer health organizations of national scope, and to bring these extra-governmental organizations in close contact with duly authorized governmental organizations.

To this end the director of the department, who has served also as the executive officer for the national organization of state health officials, has devoted much of his time in conference with the executive heads of national health organizations, these conferences resulting in agreements which will prove beneficial, not only to public health work in Illinois, but to that of the entire Nation. The assistant director of the department has served as chairman of a committee of the Executive Committee of the National Tuberculosis Association, charged with the responsibility of working out a plan of cooperation with other health organizations and has also served as president of the Illinois Tuberculosis Association authorized to represent that organization in bringing about a cooperative health program within the State.

The principal agreements resulting from numerous conferences, held for the most part in the city of Washington, are as follows: A memorandum of policy of cooperation between the state health authorities and the National Tuberculosis Association, as amended December 1, 1919; a suggestion of principles for the cooperation of the Red Cross with the state department of health and other agencies in the field of public health nursing, with amendments approved by the executive committee of the Conference of State and Provincial Health Authorities, July 29 and October 25, 1919; an agreement between the American Red Cross, the National Tuberculosis Association, and the National Organization for Public Health Nursing, for the promotion of public health nursing, and a suggested plan for cooperation between the Red Cross, the State Tuberculosis Association in states in which there is no Bureau of Public Health Nursing, and no state supervising nurse within the state department of health; a memorandum of policy of public health nursing service maintained by governmental and extra-governmental agencies, approved by the State Department of Health, the Central Division of the American Red Cross and the Illinois Tuberculosis Association.

As a result of these agreements, the conditions surrounding the activities of extra-governmental agencies which were all but chaotic, have now been brought into reasonable order and there is every reason to anticipate that the state health departments of the several states of the Nation will receive from these powerful extra-governmental agencies a satisfactory measure of assistance and support and that the state health departments will, on their part, be enabled to strengthen greatly these extra-governmental agencies, and that a more helpful spirit of cooperation may be created between the volunteer agencies themselves.

While, for the most part, the agreements entered into by organizations of national scope have dealt with general principles rather than with actual procedure, the agreement relative to public nursing service applicable to Illinois and entered into between the State Department of Health, the Central Division of the American Red Cross and the Illinois Tuberculosis Association, and based upon national agreements, is illustrative of the beneficial results to be expected from these national plans and programs.

Under the provisions of the Illinois nursing agreement, the State Department of Health is recognized as the central and coordinating head of nursing service, and the department is obliged to employ a supervising nurse who shall have jurisdiction over all publicly or privately employed public health or community nurses in the State. Associated with this State supervising nurse will be an assistant supervisor for the American Red Cross and an assistant supervisor for the Illinois Tuberculosis Association, the salaries of whom may be paid in whole or in part by the interested extra-governmental agencies. These three nurses will constitute a supervisory body dealing with nursing service throughout the State, the official actions of this body being subject to review, approval or disapproval by a standing committee consisting of an active representative of the State Department of Health, of the Central Division of the American Red Cross and of the Illinois Tuberculosis Association.

Under the provisions of this contract or memorandum of agreement no agency may establish nursing service in any community in which another organization already maintains nursing service, or has such service in contemplation, without conferring with and securing approval of the State Department of Health and other interested agencies. It is further agreed that the policy of any participating organization will be to support and encourage any existing nursing service, rather than to attempt to supplant or parallel it.

While this agreement is not yet in complete operation, owing to unavoidable delays and difficulties in completing the supervisory personnel, there has already come about a much closer understanding, particularly between the Illinois Tuberculosis Association and the American Red Cross in the matter of establishing nursing service.

For a period of over ten years the Illinois Tuberculosis Association has been the principal agency in Illinois engaged in establishing local nursing services, there being at this time about sixty such services in as many communities in the State. The American Red Cross, for a number of years, has maintained a town and country nursing service and with the termination of the war it was found that many communities had Red Cross funds which could be employed for the establishment of this popular and valuable form of health activity. On the other hand, a large number of communities throughout the State had been gradually



accumulating funds from the annual sale of Red Cross Christmas Seals, with the ultimate aim of employing nurses. With the growing appreciation of the value of public health nurses in all modern health work, and the stimulation to public nursing service given by our experience in the war and in the recent influenza-pneumonia epidemic, a condition arose which gave promise of becoming well nigh chaotic and of creating bitter competition and rivalry between the Red Cross Chapters and the tuberculosis associations of the several counties, towns and cities. Up to this time public nursing service has been subject only to the supervision maintained by the interested volunteer organization. The advantage of some form of State supervision maintained with a fair spirit of cooperation and with the assistance of the extra-governmental agencies appears obvious, theoretically, and is demonstrated to be more than satisfactory in actual application.

It is the profound conviction of the Director of the State Department of Health that a cooperative program, based upon the agreements of national associations entered into during the past year, will result in a much higher measure of efficiency throughout the State than has ever prevailed in the past. The governmental health organization cannot afford to ignore the influence and prestige and especially the interest and enthusiasm of extra-governmental organizations, and yet these extra-governmental organizations cannot accomplish their maximum of useful service unless their programs are intimately aligned with governmental health activities.

During the year just passed, bubonic plague appeared in a number of sea coast communities on the Gulf coast and on the Pacific coast. In California, the invasion of this disease appeared menacing since it was found that the disease was no longer confined to rats, but had extended to other rodents, causing it to be far more difficult to control.

The spread of bubonic plague, through invasion of rodents, is not limited geographically as was the spread of yellow fever, and consequently there was occasion for grave concern on the part of every state health authority lest bubonic plague should become one of the serious health problems of the Nation. It was quite within the range of possibility that infected rodents could be carried by steam boats or by rail from the Gulf coast, and the disease thereby be introduced into Illinois. The Director, in response to an invitation extended by the Surgeon General of the United States Public Health Service, joined a group of other state health authorities in cities on the Gulf coast, and conferred with Federal and state health authorities as to the approved means of the extermination of other rodents in case such a procedure became imperative.

Provisions have been made for a study of rats in Illinois River towns and particularly those which may be found in cargoes of steamers from the southern Mississippi River.

While unlimited mandatory power may be conferred upon the State Department of Health by the statutes, and while practically unlimited power is conferred upon the Department of Health by the Civil Administrative Code, it is recognized by State health authorities that for the attainment of the maximum of service, there must be a thoroughgoing cooperation on the part of the medical profession.

Some time ago there was created by the State Department of Health a State and county cooperating health service, whereby there was appointed in each county, on the nomination of the county medical society, a thoroughly competent physician who should serve as a representative of the State Department of Health, and who in time of emergency should be engaged in active service on a *per diem* basis. It was a duty of this county representative of the State Department of Health not only to keep the department advised of any important health or sanitary conditions developing in his territory, but also to keep his local medical society fully informed as to any new steps taken in the development of sanitary science.

This service has proved of very great value and is capable of much more extensive development. Representatives in the several counties have been designated assistant collaborating epidemiologists, bringing them in close touch not only with the State health service, but with the activities of the United States Public Health Service, and utilizing the franking privileges of the Federal Government at a considerable saving of State funds.

As one of the progressive movements in modern preventive medicine, the State Department of Health has encouraged the establishment of clinics in various parts of the State, always in cooperation with the local medical profession, and designed primarily for diagnostic purposes. This service for the most part has had the warm support of the members of the medical profession and portable or permanent clinics for crippled children, for victims of venereal diseases and of tuberculosis have been introduced in all parts of the State.

The Executive Division has also been deeply interested in the promotion of child welfare activities throughout Illinois. The annual Better Babies Conference held in connection with the Illinois State Fair, has grown phenomenally and has extended its influence to all parts of the State, causing the establishment of well babies' conferences, baby health centers and systematic physical examination of babies and young children. It is doubtful if there is any single feature in the activities of the State Department of Health productive of a more direct and higher degree of benefit than these child welfare activities, appealing as they do to the public sentiment and sympathy. It is recognized as a fundamental fact in all public health work that the control of the living conditions of children must be the forerunner of all constructive health administration.

It is believed that within the past year unprejudiced representatives of health organizations of national scope have come to recognize a greatly improved health service within the State of Illinois. With the rapid changes brought about through our lessons learned during the war, many activities have been initiated which in the past would have been regarded as rather extreme and revolutionary. The new importance which public health came to assume, however, during the war, and the policy of leadership without dictation, which has been adopted consistently by the department, have had much to do with influencing the acceptance of these new programs and with gaining for them the thoroughgoing co-operation and support of the general public and of the medical profession.

## DIVISION OF COMMUNICABLE DISEASES

JOHN J. McSHANE, M. D., DR. P. H., *Chief*

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The Division of Communicable Diseases, although handicapped to some extent during the past year by numerous changes in both the field and office forces, has accomplished a great deal in the matter of securing reports of communicable diseases throughout the State, and in the control of epidemics.

The records of the division show that during the fiscal year ending June 30, 1920, there were reported 340,514 cases of communicable diseases, as compared with 353,299 cases for the year ending June 30, 1919. Of these 340,514 cases, 170,954 were influenza, the number of influenza cases reported being 33,188 less than for the previous year.

### INFLUENZA

During the past two years, two very destructive influenza epidemics have visited this country, the first in the fall of 1918 and the second during the winter of 1919-1920.

Many of our sanitarians and epidemiologists in America state that there was a mild outbreak of influenza during the spring and winter months of 1918, increasing in virulence in August of the same year. From the history of influenza in the camps, some 40,000 cases were reported in 1917 and statistics gathered from these camps show that there was a high incidence of pneumonia late in the winter of that year and the spring months of the following year. It has been disputed as to whether the first cases appearing around Boston the first week in September, 1918, were imported from abroad or whether influenza, already in existence in this country, had merely taken on an acquired virulence. Estimates place the number of deaths from influenza and pneumonia in 1918 throughout the world from six to ten millions, by far a greater total of lives lost through the epidemic than the entire loss of all the belligerent forces during the war. It is quite striking that the first reports of influenza occurring in Illinois should have come from the Great Lakes Naval Training Station in both epidemics. Shortly after receiving reports of the outbreak of influenza at Great Lakes—about January 12, 1920—reports of the appearance of the disease began to come into the State Department of Public Health from other cities and villages along the north shore and from a number of points in northern Illinois, especially from Camp Grant and Rockford.

Like the epidemic in 1918, the disease spread southward over the State, following the large trunk lines of travel, the southern portion of



the State being the last to be affected. One notable feature of the recent epidemic was that the cases of influenza, as a general rule, were not so severe and there were far less complications than in the previous epidemic, although, from reports received by the department, there were nearly as many cases as during the epidemic of 1918. Statistics, which will be given later on, showing the morbidity and mortality in a given number of cities in the State, will prove the foregoing statement. That a large number of mild cases were called "grippe" and not reported is probably accountable for the decrease in the number of reported cases. Had all cases of "grippe" been reported, in accordance with the rules of the State Department of Health, there would, no doubt, have been many more cases recorded.

In Chicago, for a period of seven weeks—from September 22 to November 9, 1918—there were 37,186 cases of influenza and 17,080 cases of pneumonia reported. For the seven-week period, from January 10 to February 28, 1920, there were reported 28,738 cases of influenza with 8,051 cases of pneumonia. For the seven-week period in 1918, there were 7,943 deaths from pneumonia and influenza, while, for the same period during 1920, there were 3,602 deaths.

TABLE I—CITY OF CHICAGO—AN ANALYSIS OF MORTALITY AND MORBIDITY RECORDS FOR TWO INFLUENZA EPIDEMIC PERIODS—SEPTEMBER 22 TO NOVEMBER 9, 1918 AND JANUARY 10 TO FEBRUARY 28, 1920.

	Two epidemic periods —7 weeks each.	
	Sept 22— Nov. 9, 1918.	Jan. 10— Feb. 28, 1920.
<b>MORTALITY DATA.</b>		
Influenza deaths reported.....	5,044	1,800
Pneumonia deaths reported.....	2,899	1,802
Total influenza and pneumonia deaths.....	7,943	3,602
Normal pneumonia and influenza deaths for period.....	380	978
Excess pneumonia and influenza deaths above normal.....	7,563	2,624
Per cent excess pneumonia and influenza deaths above normal.....	1,980. %	269. %
Death rate, influenza-pneumonia for the epidemic period per 100,000 of population.....	305.9	137.4
Normal death rate, influenza-pneumonia, for epidemic period.....	14.5	37.3
Per cent excess of 1918 epidemic death rate, influenza-pneumonia, over that of 1920 period.....	122.6%	—
Deaths, per 100 reported cases.....	14.5	9.8
All causes—deaths from—		
Total, all causes, epidemic period.....	12,787	8,765
Normal, all causes, for this period.....	4,365	5,647
Excess deaths, all causes, epidemic period.....	8,422	3,118
Per cent excess deaths from all causes.....	192.9%	55.2%
<b>MORBIDITY DATA.</b>		
Influenza cases reported.....	37,186	28,738
Pneumonia cases reported.....	17,080	8,051
Ratio reported pneumonia cases to reported influenza cases.....	45.9%	28.0%
Influenza and pneumonia cases reported per 100,000 of population.....	2,098	1,403
Per cent excess reported cases, 1918.....	48.7%	—

The cities shown in Table I have an aggregate population of 3,328,622, or approximately one-half the population of the entire State. The influenza mortality in these cities during the recent epidemic totalled 4,653, or 136.8 for each 100,000 of the aggregate population. Assuming that a similar death rate prevailed throughout the State, the mortality for the seven weeks of the recent epidemic would reach a total of approximately 8,600. In 1918, the mortality was about 18,000 for the same period of time, showing the death rate for the 1920 epidemic to be about one-half that of the epidemic in 1918. The average influenza mortality rate for the nineteen cities listed was 130.5. The cities listed in Tables II and III have an excessively high death rate. These tables also give the influenza-pneumonia case reports and ratio of deaths to reports, the cities being rated and listed in the order of the highest ratio. Analyzing these reports, one concludes the high ratio of deaths to cases in the cities of Springfield, Aurora and Moline must be attributed to one or more of three causes, viz: (a) greater laxity of reporting cases, (b) greater severity of infection, (c) less intelligent handling of the cases. Doubtless the first is the real cause.

TABLE II—MORTALITY RECORDS—PRINCIPAL ILLINOIS CITIES—INFLUENZA EPIDEMIC PERIOD, JANUARY 10 TO FEBRUARY 28, 1920—DEATH RATES PER 100,000 OF POPULATION—CITIES ARRANGED IN ORDER OF HIGHEST DEATH RATES FROM ALL CAUSES.

Cities.	Deaths reported Jan. 10-Feb. 28, 1920.				Death rates per 100,000 of population.			Per cent deaths due to influenza and pneumonia.
	All causes.	Influenza.	Pneumonia.	Total influenza and pneumonia.	All causes.	Influenza and pneumonia.	Rank in high influenza and pneumonia rate.	
Aurora.....	185	3	76	79	518.2	221.5	1	42.7
Oak Park.....	121	3	41	44	409.3	148.8	6	36.4
Galesburg.....	100	3	38	41	397.5	162.9	3	41.0
Evanston.....	114	-----	-----	41	377.7	135.8	11	35.9
Decatur.....	167	18	58	76	377.3	171.7	2	45.5
Peoria.....	265	6	112	118	367.1	163.4	4	44.5
Springfield.....	222	-----	-----	80	342.2	123.3	13	36.0
Moline.....	99	2	31	33	341.7	113.8	15	33.3
LaSalle.....	84	34	4	38	336.0	152.0	5	45.2
Oglesby.....								
Peru.....								
Chicago.....	8,765	1,800	1,802	3,602	334.3	137.4	10	41.4
Bloomington.....	99	6	38	44	333.8	148.3	7	44.4
Danville.....	120	10	35	45	305.9	137.6	9	37.5
Quincy.....	112	8	31	39	303.7	105.8	17	34.8
East St. Louis.....	227	28	48	76	302.6	101.3	18	33.5
Rock Island.....	97	1	30	31	297.9	95.2	19	30.9
Rockford.....	219	17	94	111	292.0	148.0	8	50.7
Alton.....	86	29	11	40	286.3	133.2	12	46.5
Belleville.....	60	-----	-----	20	283.5	94.5	20	33.3
Waukegan.....	60	9	17	26	273.6	118.6	14	43.3
Elgin.....	78	5	27	32	268.0	109.9	16	41.0
Joliet.....	61	7	30	37	155.0	94.0	21	60.6
For the 21 cities.....	11,341	-----	-----	4,653	333.5	136.8	-----	41.0

TABLE III—MORBIDITY RECORDS—PRINCIPAL ILLINOIS CITIES—FOR THE INFLUENZA EPIDEMIC PERIOD JANUARY 10—FEBRUARY 28, 1920—CITIES ARRANGED IN ORDER OF HIGHEST PROPORTION OF DEATHS TO REPORTED CASES.

Cities.	Population.	Cases reported.		Deaths. Influenza and pneumonia per 1,000 of population.	Cases. Influenza and pneumonia per 1,000 of population.	Approximate date of onset of outbreak.
		Influenza and LaGrippe.	Pneumonia (all forms).			
Springfield.....	64,877	236	26	30.6	4.04	Jan. 15
Aurora.....	35,681	249	88	23.5	9.44	Jan. 14
Galesburg.....	25,155	252	24	14.9	10.97	Jan. 19
Peoria.....	72,184	774	94	13.6	12.02	Jan. 21
Belleville.....	21,161	165	7	11.5	8.13	Jan. 22
Moline.....	28,976	268	24	11.3	13.53	Jan. 21
Bloomington.....	29,663	422		10.4	14.23	Jan. 15
Joliet.....	39,353	210	156	10.1	9.30	Jan. 5
Chicago.....	2,621,419	28,738	8,051	9.8	14.03	Jan. 13
Waukegan.....	21,925	271	19	8.9	13.22	
Oak Park.....	29,562	439	68	8.7	17.14	Jan. 11
Elgin.....	29,100	317	55	8.6	12.78	Jan. 7
Quincy.....	36,883	487	34	7.5	14.13	Jan. 26
East St. Louis.....	75,000	1,074	7	7.0	14.41	Jan. 19
Evanston.....	30,178	571	19	6.9	19.55	Jan. 7
Rock Island.....	32,561	487	85	5.4	17.56	Jan. 20
Decatur.....	44,261	1,371	60	5.3	32.3	Jan. 15
Danville.....	32,696	800	70	5.2	26.61	Jan. 20
LaSalle.....						
Oglesby.....	25,000	733	52	4.8	31.40	Jan. 22
Peru.....						
Alton.....	30,036	801	48	4.7	28.26	Jan. 12
Rockford.....	75,000	2,971	248	3.4	42.92	Jan. 15
For the 21 cities.....	3,400,671	41,636	9,235	9.1	14.9	

TABLE IV—CITY OF CHICAGO—TABULATION OF INFLUENZA BY AGES—JANUARY, 1920.

Age.	Male.	Female.	Unknown.	Total.
1.....	156	126	47	339
2.....	207	193	54	454
3.....	186	215	32	433
4.....	172	177	24	373
5.....	178	210	20	408
6.....	193	181	20	394
7.....	140	122	20	282
8.....	97	131	14	242
9.....	87	79	7	173
10.....	79	66	11	156
11.....	87	69	2	156
12.....	81	80	5	166
13.....	48	56	3	107
14.....	81	82	4	167
15.....	65	71	6	142
16.....	89	89	5	183
17.....	75	116	7	198
18.....	87	166	8	261
19.....	93	148	2	243
20.....	170	230	9	409
21-25.....	922	1,722	18	2,663
26-35.....	2,157	2,586	62	4,825
36-45.....	1,181	1,371	48	2,600
46-55.....	510	784	33	1,327
56-65.....	190	383	11	584
66-75.....	107	118	6	231
76-85.....	24	54	1	79
Over 85.....	6	14	—	20
Unknown.....	1,928	2,126	—	4,054
Total.....	9,396	11,765	439	21,660
Number of cases age and sex not given.....	—	—	—	963
Grand total.....	—	—	—	22,623

TABLE V—AGE AND SEX DISTRIBUTION—CASES OF INFLUENZA REPORTED IN CITY OF CHICAGO DURING JANUARY, 1920—DATA SUPPLIED BY THE COMMISSIONER OF HEALTH OF CHICAGO, DR. JOHN DILL ROBERTSON.

Ages.	Cases.	Per cent of total cases.
5 years and under.....	1,997	11.3
6-10 years.....	1,247	7.1
11-15 years.....	740	4.2
16-20 years.....	1,294	7.4
21-25 years.....	2,662	15.1
26-35 years.....	4,825	27.4
36-45 years.....	2,600	14.8
46-55 years.....	1,327	7.5
56-65 years.....	584	3.3
66-75 years.....	231	1.3
76-85 years.....	79	0.5
Over 85 years.....	20	0.1
Total cases in which age given.....	17,606	100.
Sex.	Cases.	Per cent.
Males.....	9,396	44.4
Females.....	11,765	55.6
Total in which sex given.....	21,161	100.

Reports of cases were much more complete in the smaller cities and rural sections than in the cities having more than 20,000 population. Nineteen cities having approximately one-half the population of the State reported only one-third of the total number of cases. The city of Aurora, in which only 249 cases were reported, had at a most conservative estimate more than 4,000 cases of the disease. A similar lack of attention to reporting prevailed in the city of Springfield.

#### CAUSE OF DISEASE

The etiology of influenza is still in doubt. It is impossible to say whether or not the Pfeiffer's bacillus is the cause of this disease; nevertheless many workers still hold that, from studies recently made, Pfeiffer's bacillus must be considered the most likely cause of influenza. Claims have been made by the British that the disease is due to a filterable virus, and extensive experimentation in this direction is in progress in a number of laboratories. Experiments by Parker and by Huntoon and Hannum have demonstrated the fact that the production of a toxin by this bacillus would explain the profound systemic manifestations that accompany a relatively mild local infection.

Early in the epidemic, many bacteriological laboratories produced vaccines for the prevention of influenza. The New York City Health Department prepared and distributed a vaccine prepared from Pfeiffer's bacillus. Most of those produced by other laboratories were mixed vaccines containing the bacillus Pfeiffer, streptococci, staphylococci and a number of strains of pneumococci. Studies made under control con-



ditions have proved that the vaccines did not prevent influenza, as those who had received the inoculations suffered from the disease in about the same proportion as the unvaccinated. It has been claimed by some that, to a certain extent, vaccines prevented complications. During the epidemic of 1920, a number of studies were made by different sanitarians and bacteriologists relative to the efficacy of a mixed vaccine and about the same results were obtained as in the previous epidemic.

In the prevention of epidemics of influenza, Dr. Flexner points out that influenza is endemic in certain parts of eastern Europe. He fixes the habitat on the border between eastern Russia and Turkestan. He says, "There are excellent reasons for regarding the home of influenza as eastern Europe. Many recorded epidemics have been shown more or less clearly to emanate from that area while epidemics of recent history have been traced there with a high degree of conclusiveness." Dr. Flexner thinks the ideal method of combatting this disease would be to eradicate it in the localities where it is endemic; but, to quote Dr. John S. Billings: "Such a method of attack, while logical, is not at the present time practical because of the expense involved and the low standard of national intelligence and lack of appreciation of public health on the part of the countries where the disease is dormant."

Since suppression of the disease at its source, as above described, is at present impracticable, its control will have to be met by other means.

Influenza is a mild disease in its uncomplicated form, but fatal when accompanied by complications and should suspicious cases appear in a group the patients should be immediately isolated and put to bed. For influenza, like measles, is rarely, if ever, the immediate cause of death but these virus infections pave the way for secondary invaders like pneumococci, streptococci, etc.

Rackemann and Brock draw attention to the following resemblances between influenza and measles in order to stimulate further study of their etiology. Both diseases occur in epidemic form and are very highly contagious. Their clinical course is similar; both diseases having a sudden onset, with fever of high degree and short duration. In the acute stages the upper respiratory symptoms with coryza, lacrymation and an aggravating, unproductive cough are alike. The occasional faint evanescent rash in influenza is often suggestive of measles. Both diseases have a low leucocyte count. The greatest similarity, however, lies in the predisposition of patients to develop secondary infections of the lungs and pleura.

Because of the communicability of the disease and present-day modes of travel, its control in large cities, due to the overcrowded conditions of the street railways, elevators and many other places where people congregate, is a difficult problem. On account of the mildness of the cases, the number of carriers, and persons suffering from "colds" that may be cases of influenza, the early isolation of the cases is one of

the most known effective measures in preventing the spread of the disease and the application of this measure depends upon the individual himself. Therefore, one of the most important measures of health departments is to instruct the people or better inform them as to how they can help in preventing the spread of influenza. There is no doubt that if every person in this country—both child and adult—could be educated to the importance of keeping their hands away from the nose and mouth and of washing the hands frequently, always protecting the mouth with the handkerchief when sneezing, or coughing, a great step forward would be taken in the prevention of respiratory diseases.

The provision of hospital, medical and nursing facilities and various other sociological activities connected with the management of the community during the epidemic of influenza, are measures of the utmost importance as having a bearing, not only upon the extension of the disease, but upon the total death rate, the comfort of the victims and the subsequent influences upon related health matters, such as prevalence of tuberculosis. It is of the utmost importance that communities so organize themselves that adequate hospital care can be provided for cases of influenza and complicating pneumonia. All cases of pneumonia following influenza should be isolated from the lobular type of pneumonia caused by several varieties of the organism because either or both patients might contract a double infection. A number of the smaller cities in the State are to be commended on the way they handled the influenza situation, especially from the standpoint of nursing and hospitalization.

The most important factor then in the control of influenza is the early detection and isolation of the cases. This can only be brought about by educating the public in the elementary facts concerning influenza and arousing the people generally to practice hygienic measures which will protect them from the disease.

Preventive measures against influenza require the intelligent cooperation of every individual in the community. The attitude of each person must be to report sickness, rather than to conceal it; to respect suspicious signs of sickness, rather than to ignore them; to impose some degree of self-isolation, rather than mingle closely with others; and to observe personal hygiene, rather than assert an excessive degree of personal liberty and independence. Prevention at present depends upon individual initiative rather than public measures.

#### TYPHOID FEVER

During the fiscal year, there were reported 2,293 cases of typhoid fever as compared with 1,193 for the previous year, and 963 for the year 1917-1918. During the past year, there were a number of outbreaks, 67 cases being reported from Coles County, of which Mattoon had 54. Kane County reported 56, of which Aurora had 6, Elgin 10;

Franklin County reported 105; Knox County 58, Galesburg reporting 46; Lake County 79; Morgan County 61, of which 37 were reported from Jacksonville; Saline County 62; Will County 116, of which Joliet reported 72; Williamson County 60; Madison County 50. The State institutions reported 15 cases in all. Cook County reported 343 cases, 305 of these being in Chicago, that city having the lowest typhoid fever death rate in its history.

#### MALARIA

The reporting of malaria for the year 1919-1920 was most gratifying, a total of 2,011 being received as compared with 199 the previous year. The ten counties reporting the largest number of cases are: Clinton, 201; Bureau, 91; Franklin, 147; St. Clair, 86; McLean, 84; Morgan, 78; Saline, 65; Pike, 64; Henry, 57; Marshall, 48.

#### SMALLPOX

During the fiscal year ending June 30, 1920, there were reported to the Division of Communicable Diseases, 7,807 cases of smallpox, showing a slight decrease from the year 1918, when 8,116 cases were reported. In 1917, there were 5,670 reported cases. The continued prevalence of this disease is a sad commentary on the intelligence of the people, smallpox being an entirely unnecessary scourge, as its prevention depends only on a simple and harmless vaccination which costs little to apply.

While there have been no very widespread or severe epidemics, there have been a number of invasions by the disease, entailing human suffering, loss of life and disturbance of business and social affairs which could readily have been avoided. Cook County, representing almost one-half of the population of the State, and where vaccination is generally employed, reports only 164 cases of smallpox. In Hamilton County, 589 cases of smallpox were reported; in Franklin County, 500 cases; in Rock Island County, 406 cases; and in Greene County 469 cases.

#### MEASLES

Measles, although considered one of the "minor" diseases, is the cause of twice as many deaths of children as scarlet fever. Not until the time comes when parents feel their responsibility in protecting their children from these so-called "minor" diseases, can we expect a lowering of the morbidity and mortality rates for measles.

During the fiscal year there were 33,535 cases of measles reported, as against 29,191 cases in 1918, and 45,945 in 1917. The number of measles cases increase during the fall and assumes epidemic proportions in the winter and spring months.

#### WHOOPIING COUGH

Whooping cough, another of the so-called minor diseases of childhood, may well be considered one of the major diseases when one con-

siders the toll it levies. During the year 1919, this disease caused three times the mortality due to scarlet fever, and almost fifty times as many deaths as were caused by smallpox.

During the fiscal year, 13,275 cases of whooping cough were reported, being nearly twice the number for 1919, when 7,214 cases were reported.

#### SCARLET FEVER

During the fiscal year, there were reported to the Division of Communicable Diseases, 16,810 cases of scarlet fever, four times the number of cases reported during the past year.

During the past year, there were outbreaks of scarlet fever in epidemic proportions at Quincy, Chicago, Evanston, Oak Park, Aurora, Elgin, Alton, Bloomington, Peoria, East St. Louis, Joliet and Rockford.

#### DIPHTHERIA

In spite of the fact that the State has placed at the disposal of all persons, through the distribution of diphtheria antitoxin, means of prevention, immunization and cure from diphtheria, it is to be noted that during the fiscal year ending June 30, 1919, there were 12,876 cases of diphtheria reported. Although there is a general decrease of this disease, there is small excuse for its continued prevalence. Laboratory methods of diagnosis have been developed along the simplest possible lines and such diagnoses are available not only at the central laboratory at Springfield, but in the several branch laboratories throughout the State.

#### EPIDEMIC MENINGITIS

During the fiscal year ending June 30, there were reported to the Division of Communicable Diseases, 302 cases of epidemic meningitis, as against 591 for 1918 and 247 for 1917.

Chicago reported 102 cases, Alton 33 cases and Clinton County 14.

#### POLIOMYELITIS

During the fiscal year there was a decided decrease in the number of poliomyelitis cases, there being 364 cases as compared with 883 in 1918, and 934 in 1917. Of the 364 cases, the largest numbers were reported from Chicago, Mattoon, Fulton County, Bureau County, La-Salle County, Macoupin County and Warren County.

#### PNEUMONIA

During the past few years there has been a general observance of the rules and regulations of the department relative to the reporting of pneumonia. This is probably due to the fact that pneumonia so often complicated influenza. For the past fiscal year there were 18,270 cases of pneumonia reported, as compared with 20,097 during the previous year.



## THE COST OF COMMUNICABLE DISEASES

In the first and second annual reports of the State Department of Public Health, there were published tables showing the financial loss from preventable disease and it is believed that the facts contained in these tables have gone further toward securing public and official attention to disease prevention than any other argument or evidence ever offered. The data afforded a specific way of impressing upon city and county officials the actual tremendous cash penalty their communities were bearing annually on account of the failure to provide adequate means of disease prevention. A similar table for the fiscal year ending June 30, 1920, has been included in this report, (Table XI).

In computing the cost of communicable diseases, the following definite factors were taken into consideration and in every instance it is believed that the figures employed result in an under statement rather than an exaggeration of the facts; cost of human life, computed at \$3,000 for the adult and \$500 for the child; cost of burial for the adult, \$100 and \$50 for the child; estimate of the number of cases of illness for each death from disease prepared upon recognized epidemiological standards; the cost for medicine and nursing for the sick and the value of the loss of time from productive or gainful occupation. In these compilations, each disease was given careful and separate consideration and it is believed that the resultant figures state the case as clearly and accurately as it can be stated.

According to these figures, the total cost of communicable disease for the fiscal year, amounted to \$150,070,738. In this tremendous cost to the people of the State, tuberculosis once again takes first place. During the previous fiscal year pneumonia, which had prevailed to an enormous extent during the influenza epidemic, took precedence over the "great white plague." The cost of tuberculosis during the past fiscal year was \$90,200,500, pneumonia occupying second place with a cost of \$28,486,953, and influenza third place with a cost of \$18,895,551. The annual cost to the people of the State for the other communicable diseases was as follows: typhoid fever \$2,066,110; malaria \$2,703,153; smallpox \$809,119; measles \$591,701; scarlet fever \$170,334; whooping cough \$453,490; diphtheria \$945,069; rabies \$10,050; syphilis \$3,539,103; gonococcus infection \$380,483; epidemic meningitis, \$60,620; poliomyelitis \$81,925 and septic sore throat \$301,500.

## DISTRIBUTION OF PREVENTIVE AND CURATIVE AGENCIES

The Division of Biological and Research Laboratories, created by the last legislature, has found it impossible to function, owing to inability to obtain quarters. The distribution of biological products, therefore, has been taken care of by the Division of Communicable Diseases, as formerly, the products being purchased by contract from reputable commercial houses.

Recognizing the importance and great public economy of the free distribution of diphtheria antitoxin, the State Department of Public Health, during the past year, as in previous years, has distributed through several hundred agencies, both preventive and curative antitoxin; the Schick test to determine immunity to diphtheria; typhoid and para-typhoid vaccine; nitrate of silver solution for the prevention of blindness through infection of the eyes at birth, and smallpox vaccine for use in State institutions or in unusual emergencies.

During the fiscal year just passed, the following quantities of diphtheria antitoxin were distributed:

14,166	1,000 unit packages, chiefly for preventive use.
4,859	3,000 unit packages, for individual curative use.
9,717	5,000 unit packages, for individual curative use.
8,995	10,000 unit packages, for individual curative use.
839	10,000 unit packages, for institutional use.
730	20,000 unit packages, for institutional use.

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39,306 packages or 190,268,000 units.

Of 17,218 cases of diphtheria in Illinois during the fiscal year ending June 30, 1920, and part of the preceding year on which reports have been made to this office, 1,075 or 6.24 per cent died. The death rate in cases in which State antitoxin was used has gradually but slowly decreased during the last ten years. Such decrease, approximately one per cent, may safely be ascribed to increased initial doses and to early administration of the serum.

These figures are probably underestimated, as, in a considerable number of reports, the physicians administering the antitoxin failed to indicate the type of the disease. Of the 1,075 fatal cases, 482 were reported as of the laryngeal type. This probably is also underestimated. In 468 cases resulting fatally, the day of the membrane was not stated in the report on the antitoxin administered; 105 were reported as occurring on the first day of the membrane; 180 as on the second day; 114 on the third day; 75 on the fourth; 64 on the fifth; 39 on the sixth; 19 on the seventh; 2 on the eighth; 3 on the ninth; 4 on the tenth; and 1 on the fourteenth.

Complications in fatal cases were reported as follows: adenitis in 7 cases; arthritis in 1 case; broncho-pneumonia in 21; burns in 1; cerebro-spinal meningitis in 4; embolism in 1; endocarditis in 3; gastro enteritis in 6; hemophilia in 2; influenza in 8; laryngeal paralysis in 7; measles in 14; myocarditis in 23; nasal hemorrhage in 5; nephritis in 18; neuritis in 1; oedema of glottis in 3; oedema of larynx in 2; oedema of lungs in 1; paralysis of lower limbs in 1; paralysis of palate in 3; parotitis in 1; peritonitis in 1; pharyngeal paralysis in 4; pneumonia in 32; scarlet fever in 58; tuberculosis of lungs in 1; uraemic convulsions in 1; Vincent's angina in 1; and whooping cough in 1. These statistics are taken from the clinical reports of the physicians by whom the antitoxin was administered. It is evident that in many instances the complications were not indicated in the reports.

The ages of the fatal cases were as follows: Not stated, 10 cases; 1 year old, 110; 2 years, 135; 3 years, 158; 4 years, 125; 5 years, 110; 6 years, 90; 7 years, 75; 8 years, 48; 9 years, 37; 10 years, 45; 11 years, 18; 13 years, 10; 14 years, 7; 15 years, 5; 16 years, 5; 17 years, 13; 18 years, 10; 19 years, 5; 20 years, 4; 21 years, 5; 22 years, 2; 23 years, 3; 24 years, 3; 25 years, 4; 26 years, 3; 27 years, 2; 28 years, 3; 29 years, 3; 30 years, 3; 31 years, 2; 33 years, 3; 35 years, 2; 44 years, 1; 56 years, 1.

The ages of the non-fatal cases were as follows: Not stated, 280 cases; 1 year old, 430; 2 years, 847; 3 years, 1,029; 4 years, 1,218; 5 years, 1,116; 6 years, 1,204; 7 years, 1,134; 8 years, 1,068; 9 years, 831; 10 years, 745; 11 years, 672; 12 years, 534; 13 years, 390; 14 years, 357; 15 years, 245; 16 years, 264; 17 years, 203; 18 years, 210; 19 years, 200; 20 years, 189; 21 years, 192; 22 years, 185; 23 years, 194; 24 years, 163; 25 years, 201; 26 years, 198; 27 years, 138; 28 years, 170; 29 years, 117; 30 years, 190; 31 years, 72; 32 years, 103; 33 years, 70; 34 years, 77; 35 years, 138; 36 years, 63; 37 years, 72; 38 years, 65; 39 years, 42; 40 years, 68; 41 years, 46; 42 years, 54; 43 years, 25; 44 years, 19; 45 years, 33; 46 years, 26; 47 years, 28; 48 years, 33; 49 years, 16; 50 years, 35; 51 years, 12; 52 years, 16; 53 years, 21; 54 years, 14; 55 years, 11; 56 years, 10; 57 years, 9; 58 years, 8; 59 years, 4; 60 years, 9; 61 years, 2; 62 years, 7; 63 years, 2; 64 years, 1; 65 years, 4; 66 years, 3; 67 years, 3; 69 years, 2; 70 years, 2; 75 years, 1; 79 years, 2; 82 years, 1.

Complications in non-fatal cases were reported as follows: abscess of cervical glands in 5 cases; adenitis in 29; appendicitis in 2; arthritis in 4; bronchopneumonia in 14; cerebrospinal meningitis in 1; chicken pox in 9; confinement in 1; endocarditis in 2; erythema nodosum in 1; erysipelas in 2; facial paralysis in 1; glandular tuberculosis in 1; influenza in 21; laryngeal paralysis in 7; measles in 52; mumps in 3; myocarditis in 16; nephritis in 28; oedema of glottis in 1; oedema of lungs in 5; otitis media in 31; paralysis of glottis in 1; paralysis of lower limbs in 1; paralysis of ocular muscles in 1; paralysis of palate in 12; pericarditis in 1; peritonsillar abscess in 14; pharyngeal paralysis in 17; pneumonia in 33; post diphtheritis paralysis in 12; scarlet fever in 478; typhoid fever in 1; uremia in 1; Vincent's angina in 2; and whooping cough in 7.

TABLE VI—SHOWING THE REPORTS OF FIFTEEN PRINCIPAL COMMUNICABLE DISEASES FOR THE ENTIRE STATE OF ILLINOIS BY MONTHS FOR THE YEAR JULY 1, 1918, TO JUNE 30, 1919.

Diseases.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Diphtheria.....	487	362	604	990	703	705	731	769	665	635	668	470	7,789
Influenza.....	2	1	541	145,067	40,806	43,304	28,354	13,369	10,486	2,029	166	20	284,142
Malaria.....	2	1	3				18	20	55	97	2	1	199
Measles.....	273	121	56	141	67	171	711	1,072	2,453	5,754	5,204	3,142	19,165
Meningitis.....													
epidemic.....	26	14	16	8	4	12	20	16	14	11	18	12	171
Polio-myelitis.....	43	73	79	18	2	2	9	3	7	4	13	12	265
Scarlet fever.....	150	101	231	189	201	208	440	588	662	586	495	289	4,140
Whooping cough.....													7,214
Pneumonia.....	142	68	255	10,375	2,274	2,596	1,160	820	890	600	562	355	20,097
Smallpox.....	103	73	26	42	36	114	322	284	465	567	554	442	3,028
Tuberculosis.....	1,563	1,182	973	891	1,208	637	1,390	1,397	1,436	1,923	1,586	1,723	15,909
Typhoid fever.....	212	241	286	102	24	86	33	33	39	47	32	64	1,199
Veneral diseases.....		6			126								132
Chancroid.....	51	36	32	24	29	29	32	51	28	47	42	44	445
Gonorrhea.....	643	598	803	524	387	347	387	544	533	584	620	739	6,709
Syphilis.....	359	257	199	172	220	131	159	274	253	272	254	317	2,869

TABLE VII—SHOWING THE REPORTS OF SEVENTEEN PRINCIPAL COMMUNICABLE DISEASES FOR THE ENTIRE STATE OF ILLINOIS BY MONTHS FOR THE YEAR JULY 1, 1919 TO JUNE 30, 1920.

Diseases.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Typhoid fever.....	265	294	306	346	251	183	124	80	88	115	103	138	2,293
Malaria.....	417	294	265	170	97	63	59	112	84	114	142	194	2,011
Smallpox.....	183	135	232	260	648	779	776	842	748	1,063	1,232	909	7,807
Measles.....	1,110	255	118	342	706	1,727	4,366	4,610	4,982	5,343	5,542	4,434	33,535
Scarlet fever.....	211	188	579	1,295	1,597	1,895	2,449	2,235	2,335	1,708	1,456	862	16,810
Whooping cough.....	618	802	723	554	818	1,206	1,143	1,222	2,061	1,204	1,460	1,464	13,275
Diphtheria.....	541	528	992	1,898	2,050	1,505	1,139	938	1,058	778	793	656	12,876
Influenza.....	272	384	562	723	549	711	80,020	80,946	5,731	741	159	156	170,954
Rabies.....		1	3	3				1	3			3	14
Tuberculosis (all kinds).....	1,720	1,447	1,627	1,719	1,693	1,580	1,433	1,164	1,820	1,320	1,295	1,468	18,286
Meningitis.....													
epidemic.....	25	20	11	33	31	21	31	33	28	12	14	13	272
Polio-myelitis.....	77	101	70	28	29	17	3	5	9	7	6	12	364
Pneumonia.....	308	185	233	451	601	1,275	7,012	4,049	1,655	1,066	936	485	18,276
Septic sore throat.....	80	81	119	177	224	210	180	278	206	114	57	63	1,789
Syphilis.....	438	563	775	1,137	1,390	1,349	1,206	724	1,503	1,297	1,622	1,218	13,222
Gonorrhea.....	954	1,075	1,083	2,074	2,324	1,599	1,413	966	1,350	1,435	1,728	1,669	17,670
Chancroid.....	43	54	37	121	133	78	94	70	64	71	71	148	984



TABLE VIII—SHOWING THE REPORTS OF FIFTEEN PRINCIPAL COMMUNICABLE DISEASES FOR THE CITY OF CHICAGO BY MONTHS FOR THE FISCAL YEAR JULY 1, 1918, TO JUNE 30, 1919—MORBIDITY SUMMARY.

Diseases.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Diphtheria.....	324	264	392	607	502	558	701	541	553	460	527	413	5,842
Influenza.....			437	34,792	2,490	9,063	4,636	2,075	1,347	430	421	17	55,793
Malaria.....													
Measles.....	192	78	51	101	61	181	347	580	1,609	3,873	4,285	2,846	14,304
Meningitis.....													
epidemic.....	18	14	12	7	5		14	10	11	7	17	6	121
Polio-myelitis.....	17	28	15	5		5		2	5	4	11	4	104
Scarlet fever.....	92	62	163	104	106	163	235	268	298	238	283	185	2,197
Pneumonia.....	68	61	261	11,290		450	825	1,428	1,302	1,114	540	330	17,669
Smallpox.....	6	7	10	1		13	21	5	24	7	13	5	112
Tuberculosis.....	1,492	1,203	347	898	763	871	1,328	4,263	1,274	1,713	1,467	1,683	17,302
Typhoid fever.....	29	59	53	20	7	10	10	6	12	17	16	19	253
Veneral diseases.....													
Chancroid.....	35	26	25	21	25	29	25	45	30	24	53	37	375
Gonorrhea.....	455	423	447	294	282	287	324	422	460	480	390	584	4,815
Syphilis.....	285	304	160	158	189	146	143	249	227	242	340	311	2,754

TABLE IX—SHOWING THE REPORTS OF SEVENTEEN PRINCIPAL COMMUNICABLE DISEASES FOR THE CITY OF CHICAGO BY MONTHS FOR THE FISCAL YEAR JULY 1, 1919, TO JUNE 30, 1920—MORBIDITY SUMMARY.

Diseases.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Typhoid fever.....	31	36	33	78	35	21	14	4	12	13	14	14	305
Malaria.....													
Measles.....	2	19	5	5	5	8	2	18	26	7	17	6	120
Scarlet fever.....	753	153	101	270	536	757	977	941	1,271	1,439	1,441	1,269	9,908
Whooping cough.....	99	97	304	656	893	1,101	1,379	1,276	1,450	941	756	455	8,407
Diphtheria.....	607	484	506	292	380	696	475	400	471	424	420	395	5,550
Influenza.....	350	282	514	948	1,112	779	601	542	725	539	545	474	7,411
Rabies.....	16	26	164	218	178	212	22,623	6,606	997	135	58	21	31,254
Tuberculosis (all kinds).....			1	1									2
Meningitis.....	1,431	1,065	1,201	1,274	1,199	1,084	1,101	902	1,366	1,020	885	1,010	13,538
epidemic.....	10	7	7	15	13	1	12	10	15	5	4	3	102
Polio-myelitis.....	27	42	18	3	2	2		3	3	1	1	3	105
Pneumonia.....	277	167	191	378	483	978	4,687	839	1,159	825	739	413	11,136
Septic sore throat.....	1	2	3	14	32	39	32	10	15	10	13	10	181
Syphilis.....	353	658	719	743	548	524	497	366	454	419	460	408	6,149
Gonorrhea.....	754	1,151	940	964	1,042	802	808	842	752	879	794	695	10,423
Chaneroid.....	36	43	42	52	50	31	108	80	65	18	15	34	574

TABLE X—SHOWING THE PREVALENCE OF SEVENTEEN PRINCIPAL COMMUNICABLE DISEASES BY COUNTIES AND PRINCIPAL MUNICIPALITIES FOR THE FISCAL YEAR JULY 1, 1919, TO JUNE 30, 1920.

County.	Typhoid.	Malaria.	Smallpox.	Measles.	Scarlet fever.	Whooping cough.	Diphtheria.	Influenza.	Rabies.	Tuberculosis.	Epidemic meningitis.	Poliomylitis.	Pneumonia.	Septic sore throat.	Syphilis.	Gonorrhea.	Chancroid.
Adams	5	3	21	13	101	25	15	644	1					18	3		
Quincy	22	1	36	8	73	34	49	406		43	2	1	48	13	180	264	8
Alexander	4	5	26	136	8	5	31	259		5			13	60	1	1	
Carro	1	8		93	5	25	55	251		5			39	3	22	3	
Boone		10	13	166	36		13	1,545		13	1		45	66	6	12	3
Brown			28	192	22	49	10	351		22		3	33				
Bureau	3		42	19	51	177	23	797		3		1	6		10		
Bureau		91	49	65	68	17	10	2,348		47	11		97		33	19	2
Calhoun	4		77	18	27	173	23	1,045		17			23		2	6	
Carroll	1	6	43	38	8	31	10	927		17			35		3		
Cass			22	151	29		29	1,864		19	4		41	4	4		
Champaign	9	4	182	192	148	60	7	209		8			57		25		
Champaign	11		7	62	62	62	9	144		66	3		4		8		
Urbana	13		28	25	62	62	9	1,083		42	1		5		27		
Christian	10		4	25	24	99	6	144		8			18		16	34	1
Clark	26	16	36	218	89	26	53	1,083		40	2	1	30		74	17	
Clark	14		74	24	31	44	23	286		10			17		26		
Clay	13	21	28	50	55	118	15	1,590		40	2		37		63	113	16
Clinton	17	201	2	32	27	71	26	1,122		6			11,136	181	6,149	10,423	574
Coles	13		15	81	84	20	15	908		24	1		34		25		
Mattoon	54		327	17	15	23	17	162		23			17		8		
Cook	37	4	41	1,169	972	886	678	6,514		153			604	80	74		
Chicago	305		120	9,908	8,407	5,523	7,441	31,254	2	13,583	12	105	11,136	181	6,149	10,423	574
Evans	9		6	56	177	223	28	618		31	3		34		1		
Oak Park	7	3	5	166	183	198	98	495		15			66		11		
Graysford	10		74	97	26	9	38	467		15			25	17			
Cumberland	7		15		45	59	11	884		24	1	2	34	4	1	6	
DeKalb	1		5		26	237	6	1,054		9			22		1	7	
DeKalb	1		5		26	237	6	1,054		9			22		1	7	
DeWitt	5		23	179	43	39	20	1,063		20	1	1	45	6	8	9	1
Douglas	20	11	34	147	144	40	63	731		69		2	59	8	2	4	
DuPage	5	4	6	469	172	328	13	852		71	4	4	38	1	3	3	1
Edgar	5	2	279	163	89	5	8	752		5			16	34	4	9	
Edwards	9	8	11	95	2	21	27	676		46	6		41	9	2		
Effingham	28	10	44	116	49	14	40	637		21	1	3	13	41	2		
Fayette	35	3	37	346	46	31	21	749		18			26	15	6		
Ford	2	13	130	130	44	123	6	1,500		14			62		1	3	1
Franklin	105	147	500	630	24	103	36	2,049	2	25	3		100	14	116	84	11

	91	10	19	49	90	91	45	2,812	31	1	10	1101	31	15	33	7
Fulton.....	14	4	90	18	5	27	26	841	9	4	4	69	17	13	33	
Gallatin.....	19	6	469	24	52	28	8	181	7	1	4	41	27	3	17	4
Greene.....	2	3	59	13	60	13	20	799	15	1	1	33	12	2		
Grundy.....	20	20	589	104	84	18	27	256	15	1	1	121	23	18	12	1
Hamilton.....	12	2	26	51	77	175	8	3,107	15	3	1					
Hancock.....	12	2	30	8	1		1	99	1	3						
Hardin.....	31	18	26	21	31	10	2	342	2	1		14	9	5		
Henderson.....	31	1	101	138	68	122	73	4,686	12	1	1	135	12	7	18	1
Henry.....	10	56			9	6	3	3,298	9		2	118		4		
Idaho.....	18	2		152	73	45	70	1,443	26	1	3	56	28	26	13	
Jackson.....	19	27	103	333	86	12	17	1,569	36	5	2	183	10	62	34	4
Jasper.....	20	15	34	74	61	11	12	1,154	77			24	10	6		
Jefferson.....	33	29	81	74	43	45	54	1,992	28	1		95	13	33	10	5
Jersey.....	10	1	72	9	11	10	1	154	2	3	4	8	3	4	9	1
JoDavies.....	6	9	10	57	28	66	3	509	7			20	3	6	2	
Johnson.....	23	35	56	34	11	22	22	569	30	3		26	193	3	3	
Kane.....	10	2	8	64	102	144	20	791	15		2	26	2	52	52	
Kankakee.....	20	6	280	111	97	42	175	378	97	6		111	1	65	149	
Kendall.....	3	1	11	402	29	166	61	724	84	2		114		78	56	4
Knox.....	12	1	16	53	29	13	13	1,035	87	1	3	96	40	18	5	
Lake.....	46		74	29	14	38	29	1,217	9		3	53		15	5	1
LaSalle.....	79	3	209	519	27	60	15	2,269	13		4	27	8	88	106	2
LaSalle.....	18	18	37	374	74	52	45	1,803	21	3	9	91	12	37	75	2
LaSalle.....	11	12	83	12	12	6	6	2,945	35	1	18	88	3	65	62	
Lawrence.....	2		21	21	12	9	114	701	38	2	1	39		84	50	
Lee.....	18	23	190	293	37	21	4	379	26			6		53	64	
Livingston.....	1		4	352	118	41	13	866	30			26	2	18	1	
Logan.....	6		6	387	135	33	33	2,460	20	1		110	7	121	45	
Macon.....	5		32	187	63	50	25	2,205	29	1	1	129	5	44	25	2
Madison.....	26	1	161	481	101	44	44	421	17		1	20	3	24	20	4
Madison.....	36	10	39	1,089	29	177	93	1,069	35	1	2	66	66	517	501	18
Marion.....	10	10	148	118	146	123	117	1,781	36	2	10	44	6	208	130	1
Marion.....	36	37	56	17	147	9	311	2,382	105	33	3	83	13	81	141	8
Marshall.....	32	3	12	294	82	100	48	808	89			89	57	272	302	27
Marshall.....	3	3	48	460	23	29	178	1,464	70		3	57	3	9	4	
Mason.....	12	5	1	1	6		5	730	4		3	68	3	5	3	
Massac.....	12	5	15	1	40	223	18	1,296	11			21	2	4	14	1
McDonough.....	12	2	6	53	55	3	47	186	25		5	20	4	8		
McHenry.....	12	2	142	109	23	109	15	2,131	20	1	5	175	16		6	
McLean.....	5		398	42	250	42	149	1,600	20	1	4	87	15	7	36	
McLean.....	12	84	8	300	126	143	109	2,315	17	3	1	18	17	92	68	9
Bloomington.....	13		217	91	117	91	65	402	77		1	48	31	167	31	
Menard.....	3	12	214	14	50	19	20	1,415	20			36	13	12	42	2
Merger.....	20	22	66	4	2	63	8	1,494	9	1	1	18	23	5	3	1
Montee.....	5	2		91	52	2		358	1			21	1			

TABLE X—Concluded.

County.	Typhoid.	Malaria.	Smallpox.	Measles.	Scarlet fever.	Whooping cough.	Diphtheria.	Influenza.	Rabies.	Tuberculosis.	Epidemic meningitis.	Poliomyelitis.	Pneumonia.	Septic sore throat.	Syphilis.	Gonorrhea.	Chancroid.
Montgomery	18	10	21	342	64	117	59	1,410		18	1			69	56	40	1
Morgan	24	77	108	83	16	34	5	450		9		2		14	32	12	10
Jacksonville	37	7	103	48	7	10	12	1		27				19	120	56	3
Moultrie	1	3	37	109	47	12	7	885		1				11	7	4	
Ogle	7	1	4	268	75	42	3	1,297		14	3	1		62	8	5	
Peoria	3	17	56	87	111	47	30	643		8	4			30	10	15	
Peoria	15	45	463	376	277	195	277	950		173	4			63	238	353	28
Perry	19	21	78	59	18	10	37	252		17	1			27	47	8	
Pike	1		8	448	50	81	1	737		18		13		24	22		
Pitt.	18	64	164	102	14	50	9	506		28	1			44	3	32	1
Pike		8	13	25		5	4	322		23				15	14	22	3
Pulaski	4	23	63	131	2	4	8	306		19	3	2		17	6		
Putnam		4	6	3	4	2		198		3	3	8		14			
Putnam		4	4	14		19		217		1				4			
Randolph	6		20	16	46	5	43	1,245		8				28	9		2
Richland	33	1	262	629	66	169	61	794		90	4	4		78	52	206	8
Rock Island	14		144	660	31	208	48	501		91	4			116	151	221	15
Sadine	62	65	383	526	36	64	103	710		46	1	1		79	5	190	4
Sangamon	14	10	64	78	107	8	71	1,075		6	1	4		57	61	24	2
Springfield	24	7	23	155	139	30	88	237		385	3			69	679	432	3
Scott		9	57	2	1	1	21	129		7				7	13	6	1
Schuyler	2	16	25	4	9	50	15	830		5	5	1		11	6	1	
Shelby	18	2	4	254	51	68	8	1,170		5		2		32	16	3	
Stark	2		4	9	10	14	2	535		9	4	3		17	5	2	
St. Clair	12	33	23	430	16	29	62	715		11	3	4		33	1	12	
Belleleville	25		7	511	11	9	164	164		11	6			6	44	154	1
East St. Louis	19	53	91	629	67	6	64	1,022		145	6	3		82	1,164	1,075	185
St. Louis	1		10	17	5	8	11	312		1				23	5	5	
Stephenson	2		7	39	43	47	19	353		14		2		38	140	265	2
Freeport	13		11	128	60	18	26	1,188		12	2	4		3	11	19	
Freeport	7		19	9	25	26	17	475		6		2		3	20	94	5
Pekin	22	240	127	80	13	1	46	948		22	1			49	65	4	
Union	20	7	81	704	62	109	15	1,189		25		2		63	24	71	
Vermilion	4		13	21	21	38	24	704		47	2	1		120	56	29	17
Danville	22	32	33	97	25	19	4	326		3	1			22	33		
Wabash	4		320	6	38		5	374				17		11	1	16	
Warren	14		28	142	27	26	25	397		6				10	2		
Washington																	
Wayne	16	32	43	157	9		13	1,150		12				50	3	8	



White.....	32	1	189	13	15	44	1,903	14	1	36	15	17,670	9
Whiteside.....	41	41	49	1,030	58	54	1,829	32	2	4	4	21	19
Will.....	44	Will	11	192	66	13	1,710	22	1	34	1	1	1
Willamson.....	60	60	45	134	55	14	240	15	1	13	2	27	27
Winnebago.....	10	2	24	95	120	8	1,461	27	1	68	5	24	40
Woodford.....	15	4	19	111	185	39	595	5	4	48	28	269	8
State institutions.....	15	17	23	196	76	2	1,199	6	2	52	39	6	2
Total.....	2,293	2,011	7,807	33,535	16,810	13,275	12,876	18,286	302	364	18,270	13,222	984

TABLE XI—COST OF COMMUNICABLE

County.	Estimated population Jan. 1, 1920.	Typhoid.	Malaria.	Smallpox.	Measles.	Scarlet fever.	Whooping cough.	Diphtheria.	Influenza.
1. Adams	62,188	\$ 25,530	\$ 70,227	\$ 5,452	\$ 230	\$ 10,669	\$ 8,050	\$ 6,424	\$193,570
2. Alexander	26,059	40,830	386,128	2,507	8,420	344	250	7,124	145,870
3. Bond	18,049	10,230	16,000	1,272	2,230	900		1,624	93,120
4. Boone	15,322	5,130	1,628	2,697	2,020	569	490	274	68,080
5. Brown	10,397	630		4,027	140	1,844	2,870		76,340
6. Bureau	47,516	830	14,588	1,842	680	2,269	2,300	1,699	101,150
7. Calhoun	8,610	40,830	988	11,015	200	1,244	12,650	2,424	26,120
8. Carroll	18,035			4,122	400	219	860	274	17,670
9. Cass	17,896	16,130	668	2,127	3,180	744		1,299	77,640
10. Champaign	55,965	16,130	188	3,742	2,890	8,569	8,050	3,224	180,440
11. Christian	35,309	11,430	19,128	3,459	3,850	2,244	8,200	1,899	122,600
12. Clark	23,517	20,430		2,317	2,120	1,344	440	2,424	60,970
13. Clay	18,661	2,630	3,388	2,697	520	1,394	9,300	3,999	90,470
14. Clinton	22,947	6,530	32,188	227	2,120	1,244	3,450	3,224	48,590
15. Coles	35,108	51,030		1,557	6,300	2,494	980	1,924	66,670
16. Cook	3,053,017	189,430	29,378	19,762	188,890	350,194	183,520	572,799	7,540,680
17. Crawford	22,771	5,130	35,128	7,067	3,170	1,044	1,150	474	73,040
18. Cumberland	14,281	1,430	348	1,462	1,070	669	2,300	2,074	47,310
19. DeKalb	35,125	5,160	3,288	512	1,900	1,394	620	2,424	90,580
20. DeWitt	19,352	1,030	188	2,222	1,360	1,094	940	1,074	54,200
21. Douglas	20,074	15,330	1,788	3,267	1,490	5,469	1,150	2,149	63,280
22. DuPage	42,120	5,130	668	607	5,260	5,419	3,280	1,624	76,890
23. Edgar	27,336	25,530	348	29,642	1,650	3,344	1,150	1,624	41,690
24. Edwards	10,049	4,930	105,328	1,082	4,220	69	1,150	2,424	50,330
25. Effingham	20,055	11,830	19,128	4,217	2,280	1,794	3,450	3,224	59,240
26. Fayette	28,083	45,930	6,428	3,552	8,420	1,719	1,150	2,424	100,660
27. Ford	17,096	5,130	2,108		1,320	2,619	8,050	1,624	89,570
28. Franklin	32,100	81,630	140,428	50,637	43,070	619	9,200	8,024	275,360
29. Fulton	52,841	15,330	1,628	1,842	1,060	2,269	5,750	2,249	257,690
30. Gallatin	14,628	20,430	140,428	5,587	200	144	270	7,224	36,480
31. Greene	22,883	10,030	19,128	47,692	260	1,869	1,150	774	83,280
32. Grundy	18,580	5,130	508	5,642	1,070	2,019	130	1,799	63,260
33. Hamilton	18,227	20,430	3,228	55,992	1,060	1,619	3,450	2,424	80,930
34. Hancock	28,523	10,230	348	2,507	530	1,944	8,050	1,624	114,940
35. Hardin	7,015	15,330	140,428	14,287	2,120	44		2,424	4,260
36. Henderson	9,724	230	2,908	2,507	230	794	1,150	824	37,690
37. Henry	43,396	56,130	4,348	9,632	2,570	2,744	2,380	2,474	309,410
38. Iroquois	34,841	9,830	348	607	2,090	2,994	2,300	3,974	104,500
39. Jackson	37,091	61,230	210,628	9,822	7,200	2,169	2,300	9,624	223,560
40. Jasper	18,157	15,330	35,128	1,052	360	2,644	110	1,624	86,110
41. Jefferson	30,073	30,630	35,128	7,732	1,120	1,644	450	4,824	150,290
42. Jersey	12,682	15,330	188	6,877	110	294	100		39,270
43. Jo Daviess	21,917	1,230	1,468	987	1,140	719	2,300	99	57,960
44. Johnson	12,022	25,530	105,328	5,357	360	1,319	1,150	1,674	36,860
45. Kane	59,499	20,530	4,408	2,887	4,570	7,294	4,160	6,424	214,400
46. Kankakee	44,940	23,530	828	1,082	5,690	1,319	2,210	5,624	23,720
47. Kendall	10,777	630	188	987	180	1,269		349	43,500
48. Knox	48,663	25,130	3,288	26,922	1,370	1,044	4,600	2,774	132,630
49. Lake	74,285	96,930	508	1,557	6,860	6,174	1,200	28,774	380,000
50. LaSalle	92,925	20,430	3,288	4,692	6,450	4,669	3,450	6,999	400,180
51. Lawrence	28,694	36,930	3,708	18,087	4,450	934	8,050	1,624	61,760
52. Lee	27,750	230	3,288	417	3,640	64,969	3,450	1,624	73,230
53. Livingston	40,465	5,130		607	4,440	74,819	4,600	3,224	114,230
54. Logan	31,718	5,130		3,077	2,440	2,144	1,150	1,999	127,620
55. Macon	65,175	15,530	3,288	5,262	20,760	3,919	5,580	5,099	240,170
56. Macoupin	57,274	2,030	4,728	14,095	1,200	4,019	6,800	6,799	123,380
57. Madison	106,895	45,930	19,600	6,782	8,080	8,494	4,600	23,849	276,970
58. Marion	37,497	20,430	3,288	1,177	6,822	594	2,250	60,094	287,610
59. Marshall	14,760	5,130	7,708	322	200	169	1,150	824	47,770
60. Mason	16,634	20,430	5,048	1,462	30	1,019	3,330	1,024	65,830
61. Massac	15,267	30,630	70,228	9,977	4,220	2,494	2,300	3,399	14,430
62. McDouough	26,887	5,530	348	17,327	80	594	3,450	599	95,880
63. McHenry	33,164	1,030		417	5,650	8,469	1,700	5,874	93,670
64. McLean	68,165	66,330	11,368	1,082	5,190	6,104	3,990	7,174	272,240
65. Menard	11,694	630	1,948	20,367	160	1,250	1,150	2,174	54,026
66. Mercer	18,800	4,030	3,548	6,307	60	69	2,300	124	86,410
67. Monroe	12,839	5,100	348		4,220	1,319	20	224	16,150
68. Montgomery	41,403	6,730	1,628	2,032	5,090	2,169	1,720	3,849	200,270
69. Morgan	33,567	24,630	12,508	20,882	1,330	594	1,150	2,424	171,410

DISEASES FISCAL YEAR, JULY 1, 1919 TO JUNE 30, 1920.

Rabies.	Tuberculosis.	Syphilis.	Gonococcus infection.	Epidemic meningitis.	Polomyelitis.	Pneumonia.	Septic sore throat.	County total.	Per capita.
\$50	\$ 867,640	\$ 33,316	\$10,286	\$ 604	\$ 1,600	\$ 251,302	\$ 4,795	\$ 1,489,745	\$23.31
	924,840	30,916	18,736			134,822		1,700,787	65.27
	258,840	1,316	336	579		24,817	665	391,929	21.71
	160,240				700	65,662		307,490	20.06
	160,240	1,000			600	133,342	65	381,098	36.74
	461,550	7,116	475		3,200	123,902	3,195	724,786	15.25
	134,040	100				21,847		251,458	29.20
	147,140	4,016	186			47,462	1,600	223,916	12.40
	134,040	9,316	3,811			39,102	35	288,092	16.10
	497,740	27,916	15,836	1,304	850	138,462	1,620	918,661	16.41
	356,740	3,416	661	79	880	138,462	35	673,001	19.06
	343,640	7,116		54	600	98,422	3,195	543,092	23.09
	305,340	2,316	886	54	800	47,462	485	468,141	25.08
	251,950	11,216	136	1,454		69,302	85	431,706	18.81
	217,440	13,816	2,236	579	600	127,554	3,215	596,383	16.98
3,200	39,603,640	1,378,416	66,683	30,429	17,450	15,424,152	57,740	65,656,363	21.50
	225,740	1,816	61			74,152		427,972	14.40
	81,640	7,116	3,261	1,954	100	54,742	175	205,651	14.40
	369,840	916	211		1,500	80,222	3,195	561,791	15.99
	186,400	4,616	261	654	50	65,662	3,215	322,966	16.68
	188,240	916	3,236		100	80,222	3,236	269,872	18.42
	343,640	4,116	86	654	750	105,702	15	553,841	13.15
	382,940	1,116	261	654	800	40,182	1,920	532,851	19.49
	225,740	916		154	800	18,077	95	415,315	41.32
	343,640	7,116	286	29	1,600	87,502	415	545,751	27.20
	317,440	1,316	186		2,400	109,342	6,455	607,422	21.62
	173,340	3,916	111		50	55,012		342,850	20.05
100	723,540	18,516	5,236	2,604	800	218,552	1,720	1,580,036	49.22
	396,040	11,516	861	29	1,600	174,862	1,890	874,616	16.55
	238,840					49,757	1,590	503,950	34.45
	291,240	5,116	461	104	750	69,302	175	521,331	22.83
	120,940	1,016		29		62,022	1,850	265,415	12.31
	330,540		86		800	69,302	125	569,986	31.27
	278,140	2,516	336		50	75,782	235	497,232	17.52
	134,040		3,636	79		14,702		331,350	45.71
	68,540	1,216				14,432	1,670	132,191	13.34
	396,040	8,016	561	29	150	254,942	6,425	1,055,851	24.30
	225,740	3,316	361	29	150	62,022	3,435	421,696	12.40
	527,040	22,416	886	129	1,600	117,847	3,255	1,199,706	32.34
	210,440		186			36,542	1,680	391,806	21.57
	553,240	10,216	286	29	800	15,662	135	812,186	27.01
	94,740	1,116	261			25,622	35	183,943	14.66
100	186,440	4,416	86	79	200	83,862		341,086	15.65
	120,940	1,016	111			25,352	3,510	328,507	27.32
50	1,444,040	38,816	12,661	1,854	800	800	11,060	1,774,754	15.62
	1,247,540	2,516	3,261		700	214,902	8,280	1,541,202	34.30
	81,640			579		16,192		145,514	13.50
	618,740	20,316	5,911	654	900	276,782	11,060	1,132,121	23.26
	920,040	26,116	1,911	629	1,550	353,508	4,850	1,830,727	24.64
	916,540	14,936	4,436	79	475	298,622	3,185	1,688,331	18.17
	278,140	1,016	111	654		47,462	115	463,041	16.14
	238,840	2,516	61	654	600	76,582	1,600	471,701	17.00
	225,740	19,016	1,161	40	1,200	102,062	1,650	557,919	13.79
	540,140	5,116	661	40	50	60,957	55	750,579	23.67
	802,140	73,416	19,261	579	150	170,922	3,185	1,369,261	21.00
	502,140	24,616	3,286	86	2,150	163,742	3,215	769,286	13.43
	1,535,940	42,216	16,361	1,286	700	462,422	3,285	2,456,315	22.97
	608,740	10,516	136	61	100	163,742	1,610	1,113,170	29.75
	94,740	1,616	111		700	47,122	1,590	209,152	14.15
	37,200	7,316	386		800	36,542	25	180,442	10.85
	291,240	7,716				69,302	45	505,982	33.15
	173,340	1,316	186		250	98,167	8,040	405,107	15.06
	356,740	1,416	936	29	200	149,382	3,305	628,868	18.96
3,150	841,440	35,116	11,811	629	800	688,342	3,325	1,958,091	28.72
	173,340	5,016	1,086			43,822	1,710	307,273	26.28
	186,440	1,216	111		1,600	51,102	1,810	345,127	18.46
	120,940			29		40,182	15	188,547	14.69
	435,340	15,616	4,136	29	800	131,182	175	810,766	19.10
	710,440	22,616	4,836		100	331,402	1,900	1,306,222	38.32

TABLE XI—

County.	Estimate population Jan. 1, 1920.	Typhoid.	Malaria.	Smallpox.	Measles.	Scarlet fever.	Whooping cough.	Diphtheria.	Influenza.
70. Moultrie.....	14,630	230	508	3,552	2,210	1,194	120	824	55,620
71. Ogle.....	27,864	1,430	188	417	3,250	2,994	1,150	99	87,540
72. Peoria.....	111,704	25,530	12,048	9,632	8,820	19,894	4,620	18,699	335,400
73. Perry.....	24,303	10,030	105,328	7,447	3,170	1,319	1,150	2,049	105,370
74. Piatt.....	15,714	5,130	-----	797	5,600	2,619	1,360	49	44,740
75. Pike.....	26,866	9,830	10,268	15,167	1,040	10,419	1,150	2,424	102,730
76. Pope.....	11,215	-----	1,108	1,282	270	-----	50	824	12,690
77. Pulaski.....	14,629	830	175,528	6,022	2,410	69	1,150	2,424	65,230
78. Putnam.....	10,325	-----	568	590	50	119	20	2,424	20,750
79. Randolph.....	29,109	30,630	35,128	417	6,320	-----	610	-----	73,640
80. Richland.....	15,970	1,230	35,128	2,792	80	90,999	1,150	3,849	68,420
81. Rock Island.....	85,301	25,730	188	41,707	15,960	33,544	12,650	6,049	165,020
82. Saline.....	38,353	51,030	16,628	36,422	8,580	919	3,450	9,624	208,770
83. Sangamon.....	110,121	23,130	4,888	8,302	4,000	8,369	2,300	14,424	248,890
84. Schuyler.....	13,285	40,830	2,588	2,412	60	244	1,150	4,042	45,670
85. Scott.....	9,489	-----	1,468	5,452	40	44	10	74	16,980
86. Shelby.....	29,601	6,330	348	507	3,110	3,919	1,830	224	117,270
87. Stark.....	10,098	430	-----	507	110	269	140	74	39,620
88. St. Clair.....	151,490	35,730	140,428	10,662	28,370	5,219	5,750	17,724	215,971
89. Stephenson.....	39,773	5,130	-----	1,652	590	7,819	3,450	3,224	174,220
90. Tazewell.....	34,814	6,630	6,548	2,887	1,390	2,694	9,200	1,219	112,900
91. Union.....	21,856	35,730	140,428	12,102	650	336	10	2,324	7,780
92. Vermilion.....	86,162	86,430	4,248	8,967	12,620	5,219	9,200	1,549	53,900
93. Wabash.....	17,201	20,430	105,328	3,172	5,270	2,619	190	824	63,770
94. Warren.....	23,456	5,130	-----	54,337	80	969	-----	149	89,610
95. Washington.....	18,759	9,930	41,128	5,297	1,990	694	1,150	699	25,840
96. Wayne.....	25,697	15,330	35,128	4,122	1,590	244	610	1,624	92,270
97. White.....	23,052	9,930	35,128	17,992	1,070	390	610	3,324	112,200
98. Whiteside.....	36,174	430	6,588	4,692	13,620	2,019	1,090	799	102,160
99. Will.....	92,875	66,330	-----	5,357	5,480	4,144	820	10,424	195,670
100. Williamson.....	62,105	71,430	26,308	2,197	18,920	2,619	4,100	12,824	234,080
101. Winnebago.....	90,929	5,130	668	4,122	3,180	24,169	2,670	9,774	304,440
102. Woodford.....	20,506	-----	668	892	170	644	160	249	43,160
Grand total.....	-----	\$2,066,110	\$2,703,153	\$809,119	\$591,701	\$770,334	\$453,490	\$945,069	\$18,895,551



Concluded.

Rabies.	Tuberculosis.	Syphilis.	Gonococcus infection.	Epidemic meningitis.	Polio-myelitis.	Pneumonia.	Septic sore throat.	County total.	Per capita.
-----	199,540	1,116	161	-----	50	47,462	1,650	314,237	21.48
-----	251,940	5,316	411	79	200	109,342	85	464,441	16.67
-----	2,295,540	87,516	18,336	1,304	2,400	546,142	7,940	3,393,821	30.38
-----	317,440	2,916	236	29	-----	43,822	475	600,782	20.60
-----	212,640	-----	61	-----	650	47,462	25	321,133	20.44
-----	448,440	4,116	836	1,304	-----	72,942	3,235	684,351	25.41
-----	74,540	5,216	6,376	-----	-----	5,378	190	107,913	9.62
-----	461,540	10,316	3,151	-----	1,050	65,662	1,610	796,992	54.48
-----	68,540	4,416	-----	79	950	25,622	55	124,183	12.02
-----	448,440	3,841	-----	-----	-----	134,822	8,345	740,193	25.42
-----	220,940	1,616	-----	-----	-----	44,022	1,600	390,826	24.47
-----	1,116,540	48,916	13,831	1,954	2,400	418,742	4,760	1,887,991	22.10
-----	540,140	13,616	4,786	29	1,600	98,422	2,190	996,206	25.97
-----	1,603,640	119,016	14,536	654	2,400	502,462	7,930	2,564,941	23.29
-----	173,340	816	61	-----	800	21,984	1,640	295,637	22.24
-----	55,440	1,816	186	-----	-----	25,622	135	107,247	11.30
-----	493,340	4,316	111	-----	100	112,982	165	744,552	25.25
-----	55,440	-----	86	-----	150	11,737	-----	108,563	10.75
-----	1,552,640	157,016	37,261	1,304	2,000	464,062	1,590	2,675,727	17.66
-----	382,940	20,766	6,786	54	250	131,182	6,375	744,438	18.71
-----	435,340	19,316	2,861	654	2,900	378,702	-----	983,241	28.24
-----	5,192,540	72,216	136	654	600	330,242	2,230	5,732,988	26.23
-----	1,168,940	45,916	18,036	54	150	327,742	10,305	1,753,276	23.49
-----	225,740	-----	-----	29	-----	25,622	1,810	454,854	25.14
-----	128,240	2,016	436	-----	850	249,662	6,525	543,104	23.11
-----	120,940	-----	-----	-----	-----	51,102	-----	259,270	13.82
-----	324,340	1,016	236	-----	-----	85,212	4,750	466,472	22.41
-----	382,940	-----	262	29	750	125,782	155	690,565	29.81
-----	369,840	9,016	511	654	2,350	35,862	1,620	551,251	15.23
-----	1,142,740	22,716	736	579	-----	407,822	6,585	1,869,403	21.38
-----	815,240	12,416	1,036	579	1,600	210,800	6,355	1,423,704	22.94
-----	1,037,940	8,315	10,811	104	800	100,442	8,160	2,343,526	25.77
-----	147,140	4,016	186	104	100	41,262	6,345	245,096	11.95
\$10,050	\$90,002,500	\$3,539,103	\$380,483	\$60,620	\$81,925	\$28,436,953	\$301,500	\$150,070,738	\$22.93

## DIVISION OF TUBERCULOSIS

GEORGE THOMAS PALMER, M. D., *Acting Chief*

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For a number of years past, the State Department of Health has stood definitely for a policy of cooperation between governmental and extra-governmental agencies in all public health work. It is doubtful, however, if so satisfactory a degree of cooperation had been attained in any of the activities of the department as in those devoted to the prevention, suppression and cure of tuberculosis.

The assistant director of the department has served for many years as president of the Illinois Tuberculosis Association, and it has been possible during the past three years for the State association and the State Department of Health to agree upon one definite State tuberculosis program which has been carried out jointly by the two organizations.

In many desirable activities, the Division of Tuberculosis of the State Department of Health has been without funds and in such cases the State Tuberculosis Association has assumed that portion of the program. It is unquestionably true that this thoroughgoing cooperation between the State Government and extra-governmental agencies has been largely responsible for the remarkable progress made in Illinois which has attracted the attention of public health authorities and tuberculosis workers throughout the Nation.

The Illinois tuberculosis program has included the following activities:

1. The establishment of county tuberculosis sanatoria in all of the counties of the State, under the provisions of the Illinois County Tuberculosis Sanatorium Act. The law provides that these county sanatoria may be equipped at public expense with free tuberculosis clinics and visiting nurse service.

2. The stimulation of interest on the part of the medical profession in the diagnosis of early tuberculosis, to which end there has been maintained an efficient clinical consulting staff whose members have held clinics in cooperation with county medical societies in practically all of the counties of the State. This clinical service, in many instances, has resulted in the establishment of permanent clinics manned by efficient physicians and supported by private funds.

3. The establishment of public health or community nursing service maintained by private funds. Such services are now established in a majority of the counties of the State.

4. Child welfare activities, particularly in the public schools, including the enrollment of over 500,000 school children in Illinois in the organization known as "Modern Health Crusaders," and the stimulation of physical examination of school children, the weighing and measuring of school children, the establishment of nutrition classes and the development of open air schools and open window rooms.

5. The development of local tuberculosis associations, one of which is now more or less active in every county in the State. These local associations carry out various activities and are financed for the most part by the sale of Christmas Seals and health bonds through the Illinois Tuberculosis Association and the National Tuberculosis Association.

6. Tuberculosis surveys have been made in the majority of the counties of the State, primarily for the purpose of impressing upon the public the importance of the local tuberculosis problem as a forerunner to the submission to the people of the proposition of establishing county tuberculosis sanatoria or to the establishment of clinical and nursing service at private expense.

7. A comprehensive educational campaign keeping constantly before the public the importance of the tuberculosis problem, not only as it affects the prevention and suppression of this particular disease, but in its relationship to all phases of social and public health activity.

While much of the credit for the successful carrying out of this program is due to the Illinois Tuberculosis Association and to the generous spirit which has always marked the cooperation of that association with the State Department of Health, there are a number of functions necessarily performed by the State Department of Health itself which are contributing materially to the reduction of tuberculosis mortality and tuberculosis morbidity in Illinois. These include the following:

1. The examination of all plans of county tuberculosis sanatoria under the provisions of the County Tuberculosis Sanatorium Act, requiring that all premises used for sanatorium purposes shall first be approved by the State Department of Health.

2. The inspection of sanatorium sites with special attention to sanitary installation. This work has been done in conjunction with the Division of Sanitary Engineering.

3. The inspection of buildings, plants and sites purchased for sanatorium purposes with special reference to their fitness for such purposes, their sanitary installations, their fire hazards and other essential factors in sanatorium operation and equipment.

4. The inspection of existing municipal and county tuberculosis sanatoria and their rating or grading by a score card system for the purpose of placing in the hands of the public officials and the general public the relative standing of public and private institutions for the treatment of tuberculous persons.

5. The preparation of standard rules and regulations for the control of public tuberculosis sanatoria and the preparation of standard blanks and forms necessary to the carrying out of the provisions of the county tuberculosis sanatorium law.

6. The enforcement of the rules and regulations for the control of pulmonary tuberculosis, and the encouragement of the reporting of all known or suspected cases of tuberculosis to local health authorities by physicians, attendants, nurses, householders or any other persons.

7. The care and treatment of returned tuberculous soldiers, sailors, marines and nurses, and the following up of these persons after dismissal from sanatoria through notification of local health authorities and visiting nurse services.

#### I. COUNTY TUBERCULOSIS SANATORIA

Until the year 1917, Illinois had less satisfactory facilities for the care of its tuberculous citizens than any other of the larger states of the Union. The State had not established State tuberculosis sanatoria and, up to that time, there was no provision for the establishment of county tuberculosis sanatoria. The Forty-ninth General Assembly, however, enacted a county tuberculosis sanatorium law which is regarded as one of the most satisfactory in effect at the present time in any part of the United States. The law does not make the establishment of county tuberculosis sanatoria mandatory upon the county, but permits any group of citizens, numbering 100 or more, to petition the county board of supervisors or county commissioners to submit to the people by referendum the proposition of establishing such a sanatorium and of levying a special tax therefor. It then becomes mandatory upon the county board to submit the petition to the voters. The law is so written that there may be established, in connection with such tuberculosis sanatoria, free tuberculosis dispensaries and visiting nursing service. The Attorney General of Illinois has also held that even after the sanatorium proposition has been successfully carried, it is not mandatory upon the people actually to erect and maintain a sanatorium. The county tuberculosis sanatorium board upon being created, may lawfully spend funds derived from the sanatorium tax for the care of persons in existing public or private sanatoria. The law is specific, however, in providing that the benefits derived from the county tuberculosis sanatorium funds shall be utilized for rich and poor alike, the law being no more regarded as a



matter of philanthropy or charity than a law for the creation of the free schools of the State. Another commendable feature of the law is that county tuberculosis sanatoria cannot be built upon the grounds of a county almshouse and further, that no one having to do with a county almshouse can be connected in any way with the management of a county tuberculosis sanatorium.

Within the past few years, the county tuberculosis sanatorium proposition has been submitted in almost 50 of the 101 counties of the State, outside of Cook County, and in every instance save two, the proposition has carried by overwhelming majorities. In one of the counties of very small population and where no educational work had preceded the election, the measure was beaten, and, in another county, the measure was defeated on account of the faulty manner in which the ballot had been prepared. In this latter county, however, the measure later succeeded in passage and at the present time a sanatorium building, costing approximately \$150,000 has been purchased and will soon be ready for occupancy.

As these pages are written, a number of public sanatoria are in operation, several more are in the process of construction in spite of the difficulties attendant upon extensive building at the present time, while plans are prepared for others, and still others are under serious contemplation.

Municipal sanatoria created under the provisions of the municipal sanatorium law, enacted in 1915, are now in operation in Chicago, Rock Island, Peoria and Rockford. It is very likely that the municipal sanatorium at Rock Island will be abandoned for the establishment of a Rock Island County sanatorium.

Of the county tuberculosis sanatoria, those now in operation are "Fairview," McLean County tuberculosis sanatorium at Normal; Adams County tuberculosis sanatorium at Quincy; and the LaSalle County tuberculosis sanatorium at Ottawa. In DeKalb County a small sanatorium is now in operation at DeKalb and plans are being pushed for erection of more extensive buildings.

Among the county sanatoria actually under process of construction are the Morgan County sanatorium at Jacksonville; the Tazewell County tuberculosis sanatorium at Mackinaw; the McDonough County tuberculosis sanatorium at Bushnell; the Woodford County tuberculosis sanatorium at Minonk and the Kane County sanatorium at North Aurora.

The counties which have voted favorably on the county tuberculosis sanatorium proposition up to this time are as follows:

Adams.	Jackson.	Ogle.
Boone.	Jefferson.	Piatt.
Bureau.	Kane.	Pike.
Champaign.	Knox.	Randolph.
Christian.	LaSalle.	Rock Island.
Clark.	Lee.	Scott.
Clay.	Livingston.	Shelby.
Coles.	Logan.	Stephenson.
Crawford.	McDonough.	Tazewell.
DeKalb.	McLean.	Vermilion.
DeWitt.	Macon.	Whiteside.
Douglas.	Madison.	Will.
Fulton.	Marion.	Winnebago.
Grundy.	Montgomery.	Woodford.
Henry.	Morgan.	

Of these, the major portion have levied a tax and if not actually proceeding with the construction of a sanatorium, are making provision for their tuberculous people at public expense in existing public or private institutions.

A considerable number of these counties have already established permanent tuberculosis dispensaries, either with or without visiting nurse service, and it is anticipated that, within the next few years, practically all of the counties in the State of Illinois will have voted favorably on the tuberculosis sanatorium proposition and will have established free diagnostic service with the necessary visiting or community nurses.

## II. STANDARDIZING ILLINOIS SANATORIA

For the purpose of attaining the highest degree of efficiency in the equipment and operation of public sanatoria in Illinois, the State Department of Health during the past year has carried out an inspection of all county and municipal sanatoria, rating these institutions by the employment of a score card which had received the approval of the National Sanatorium Association and the National Tuberculosis Association.

In making these inspections and ratings the State Department of Health was fortunate in securing the cooperation and financial assistance of the Illinois Tuberculosis Association and also of obtaining the services of Dr. W. H. Watterson, tuberculosis officer for the Eighth District of the Federal Board for Vocational Education, and a man who has had wide and varied experience in institutional work. Dr. Watterson, a number of years ago, established a small private tuberculosis sanatorium at Waukegan. He was later employed as medical superintendent in a private sanatorium in Minnesota, and later was connected in an important capacity with the Cook County Tuberculosis Sanatorium at Oak Forest and with the Chicago Municipal Tuberculosis Sanatorium. Since that time, in his connection with the Federal Board for Vocational Education, he has inspected a large number of institutions. This experience gave to Dr. Watterson an exceedingly broad vision in all types of institutions, including the little pioneer sanatorium with meagre

equipment, the high classed and expensive sanatorium and the large public institutions.

The inspections made during the past year by Dr. Watterson for the State Department of Health included only the public sanatoria over which the department is given a certain measure of jurisdiction by the Civil Administrative Code. In rating these institutions, on a basis of 100 points, the following weights, approved by the National Tuberculosis Association, were allowed: Location and site 3.0; plant and equipment 5.0; business and domestic management 18.0; medical and nursing service including care of patients 74.0.

In the arrangement of the score card, which was adopted from that approved by the National Sanatorium Association with certain modifications deemed necessary in Illinois, a certain degree of latitude was accorded the inspector for the purpose of determining the actual character of service rendered in the various institutions.

While a reasonable amount of credit was accorded an institution for the maintenance of well equipped laboratories, evidence was required that these laboratories were actually employed in every day work to obtain full credit. For example, an institution having large and well equipped X-ray laboratories, but whose records show that very few X-ray plates were made, was not rated as high as the institution which maintained no X-ray laboratories of its own, but which utilized to a considerable extent the services of an outside laboratory. In this respect, credit was also given for the ability of the X-ray technician to interpret his plates properly, this being regarded infinitely more important to the welfare of the patients than the mere possession of X-ray equipment.

In placing a rating upon the efficiency of medical treatment in the institution, the employment of such modern methods as artificial pneumothorax was given favorable consideration, but, on the other hand, when it was apparent that artificial pneumothorax was employed excessively or injudiciously, the institution was penalized, rather than credited.

It was definitely understood that in the first rating of Illinois public tuberculosis sanatoria, the scores would not be made public, but would be communicated to the boards of sanatorium trustees and other institutional authorities with a full explanation of the ratings, so that the inspection should have a full measure of educational value. For this reason the credits and ratings of Illinois sanatoria are not made public at this time, but it may be stated that the prevailing faults detected in the existing Illinois institutions, may be grouped as follows:

(a) Failure to appreciate that tuberculosis constitutes a distinct medical specialty and the consequent employment in public tuberculosis sanatoria of medical directors or attending physicians inadequately trained in tuberculosis work.

(b) Unsatisfactory methods of diagnosis.

(c) Failure to provide tuberculosis dispensaries for the detection of cases suited to sanatorium care and failure to provide dispensary and nursing service for sanatorium patients after discharge from their several institutions.

(d) Misinterpretation of the aims of the county tuberculosis sanatorium law and the care of patients in the spirit of public philanthropy or charity.

(e) Failure to employ properly trained and qualified nurses, especially those having tuberculosis experience.

It is expected that a second inspection and rating of public Illinois sanatoria will be made in the near future, in which case the results of these inspections will be open to the public so that public officials and the people as a whole may be properly guided in the selection of institutions and so that the people of the several counties may be fully advised as to the relative efficiency of the institution which they maintain.

It is also seriously under consideration to make a similar inspection and rating of all of the private tuberculosis sanatoria in the State. In making this latter inspection the State Department of Health will not insist upon its right or authority, but will make it optional with the private institutions as to whether or not such inspection is desired. It is believed that the sanatoria of the better class will welcome this service from the department, and that it will result in very great improvement in all of the institutions of the State.

During the past year, a great deal of time has been devoted by the Division of Tuberculosis to passing upon plans and specifications of proposed sanatoria and in inspecting buildings and premises purchased for sanatorium purposes. In this very important work the division has received valuable assistance from the Division of Sanitary Engineering which has conducted numerous investigations and studies of sanitary installation, providing the plans for water supply and sewage disposal and drainage.

The Division of Tuberculosis has also been engaged, at the instance of county tuberculosis sanatorium boards, in preparing rules and regulations for the operation of county tuberculosis sanatoria and forms and blanks necessary to carry out the provisions of the county tuberculosis sanatorium law.

On account of adverse legal decisions and conflicting opinions of legal counsel, it has been necessary to carry on voluminous correspondence in the guidance of county tuberculosis sanatorium boards, especially those counties where the proposed sanatorium tax was in excess of the constitutional tax limit. In some instances, it has been necessary to recommend the resubmission of the proposition to the people to secure authority for the levying of the excess tax, and in such cases the division has rendered every possible assistance in making preparations for cam-



paigns, while the Illinois Tuberculosis Association has undertaken the field work essential to the successful carrying out of such campaigns.

### III. EXTENSION OF CLINICAL SERVICE

Recognizing the necessity of securing the thoroughgoing coopération of the medical profession and of stimulating the interest of physicians in the early diagnosis of tuberculosis, the Division of Tuberculosis has cooperated with the Illinois Tuberculosis Association in the establishment of a clinical consultant service which is said to be the most efficiently conducted of any similar service in the United States. A clinical consultant staff made up of seven of the best known tuberculosis experts in Illinois, and headed by the acting chief of the Division of Tuberculosis, and by Dr. Russell E. Adkins, director of Medical Field Service of the Illinois Tuberculosis Association, has conducted 154 clinics in 102 communities of the State, covering 61 counties during the past year. These clinics have all been conducted with the cooperation of county medical societies and the attendance on the part of the medical profession has been very gratifying. In many instances it was found that the attendance of physicians at these clinical meetings had been greater than that of any local medical society meeting for a period of five years past. In one community where, five years ago, it was impossible to induce any persons suspected as being tuberculous to present themselves for examination, seventy-four patients were found in the clinic waiting room at one time, while fourteen of the twenty physicians located in the county remained in attendance upon the clinic from early morning until late in the evening. It is generally recognized that this clinical service has been an enormous stimulus to the interest taken in tuberculosis work by the physicians of Illinois.

In connection with the care of returned sick and wounded tuberculous soldiers, sailors, marines and nurses, of whom there are approximately 3,000 in Illinois at the present time, the United States Public Health Service designated one physician in each county as a local medical examiner and also appointed other physicians as acting assistant surgeons and as consulting specialists. It is asserted that while the medical service accorded by the Federal Government to service men and women was for the most part satisfactory, there was a distinct need for special training of physicians in the diagnosis and treatment of those suffering from tuberculosis. For this reason the United States Public Health Service decided to establish, in a number of localities throughout the United States, schools for the diagnosis of tuberculosis designed for medical men attached to their service. In the establishment of the school in Illinois, it was decided that Springfield afforded the most suitable point on account of the large clinical facilities and on account of the cooperative assistance which could be rendered by the State Department of Health. The school was accordingly established in Spring-

field, in conjunction with the Palmer Tuberculosis Sanatoria, the Springfield Tuberculosis Association and the laboratories of the State Department of Health and, a little later, when a similar school established in Wisconsin had been abandoned, the Springfield school was made the Federal Service School for the States of Illinois and Wisconsin. The course extended over a period of seven days with three sessions each day and proved so successful that in all likelihood it will be conducted as a permanent institution, either by the United States Public Health Service or jointly by the Illinois State Department of Health and the Illinois Tuberculosis Association.

#### IV. TUBERCULOSIS WORK AMONG SCHOOL CHILDREN

It is now generally recognized that tuberculosis among adults is for the most part dependent upon infection occurring during childhood, one authority going so far as to say that all such infection occurs prior to the sixth year of life. Whether or not this assertion is too sweeping, it is generally accepted that all tuberculous disease is more or less dependent upon childhood infection; that perhaps 80 per cent of the adult population show evidence of tuberculous infection which does not manifest itself as a distinct disease until something arises in the life of the individual which lowers his resistance. On this account work among school children has become an exceedingly important part of tuberculosis work, and the Illinois program for the prevention and suppression of tuberculosis has included a large amount of such child welfare activities although, for the most part, this work has been delegated in the joint program to the Illinois Tuberculosis Association.

It is stated that at the present time there are over 500,000 Illinois school children enrolled in an organization known as the "Modern Health Crusaders." This organization, fostered by the National Tuberculosis Association, not only carries out an educational campaign on general health in the schools, but imposes upon each of its members an obligation actually to live a wholesome life. The individual school child is regularly graded and scored on his performance of the health program, while the individual school rooms are graded on their percentage in health efficiency. In this way the individual child is not only interested in living a wholesome life so that he may attain a high personal score, but he is jealous of the conduct of his associates lest their carelessness lower the standing of the school room or of the school.

Included in the program of the modern health crusaders is the work of weighing and measuring school children, coupled up closely with the physical examination of pupils and the functions of the school nurse. The weighing, measuring and examination of school children, through the Illinois tuberculosis program, has brought to light scores of children physically below par who are in need of special nourishment or of unusual provision for their school care.

The Division of Tuberculosis, working in conjunction with the Illinois Tuberculosis Association, has constantly advocated the establishment of open air schools or open window rooms in all schools in Illinois, and it is contemplated that this educational program will be carried out to such an extent that there will be provision for the undernourished or physically subnormal child in all parts of the State during the next few years.

The Illinois Tuberculosis Association has established a working relationship with the Illinois Council of Parent-Teacher Associations whereby the Illinois school tuberculosis program has been made the essential health program of parent-teacher organizations, and as these lines are written, a future cooperative arrangement has been entered into with the Elizabeth McCormick Memorial Fund whereby special nutrition classes will be financed with Christmas Seal funds in every county in the State during the coming year. The Illinois Tuberculosis Association has designated one of its most competent nursing supervisors to the special field of nutrition work. During the coming year, the Division of Child Hygiene and Public Health Nursing of the State Department of Health will doubtless lend all possible assistance to the Division of Tuberculosis, the Illinois Tuberculosis Association and the Illinois Council of Parent-Teacher Associations to bring about the first definite and coordinated activity among school children that has been carried out on a state-wide basis.

It is stated over 60 per cent of the county superintendents of schools throughout Illinois have announced that their teachers may receive special credits in their professional records for all modern health crusade work in which they are engaged.

#### V. ESTABLISHING NURSING SERVICE

For a period of over ten years, the Illinois Tuberculosis Association has been the one organization in Illinois interested in the establishment of community nursing service. It is stated that there are a few communities in the State where public health nursing, tuberculosis nursing, child welfare nursing or school nursing is now in operation in which the tuberculosis agencies have not taken the initial step in establishing such services. The Illinois Tuberculosis Association has nursing service in its affiliated organizations in 60 of the 102 counties in the State, while funds are on hand in local treasuries for the employment of many more nurses who could not be obtained on account of the unusual demands and shortage of nurses during the past few years.

The Division of Tuberculosis has cooperated closely with the Illinois Tuberculosis Association in the establishment of local nursing service and, while the supervision of nursing service will in the future be turned over very largely to the Division of Child Welfare and Public Health Nursing under the provisions of a contract with the American Red Cross

and the State Tuberculosis Association, to which reference has been made heretofore, the Division of Tuberculosis will continue to interest itself, not only in the establishment of general community nursing service, but in the employment of special tuberculosis nurses in all of those communities in which sanatoria are established or in which it is deemed expedient to maintain special tuberculosis dispensaries. The State Department of Health, working jointly with the Illinois Tuberculosis Association, will employ a supervisor of tuberculosis nursing who will be affiliated with the Division of Child Welfare but who at the same time will be responsible to and work in close connection with the Division of Tuberculosis.

During the past year, the Chicago School of Physics and Philanthropy, in the maintenance of their classes for public health nurses, have insisted that these nurses devote at least one month to actual field service under supervision, and the Illinois Tuberculosis Association has been asked to assign these nurses, who are for the most part women of special training and ability. It has been the policy of the Illinois tuberculosis program to place these women in groups of counties where nursing service has never been established in the past, and where they will be so situated as to make constant supervision by the supervising nurses entirely practicable. The nurses are furnished for a period of one month without cost to the community and the results of the experiment have been most gratifying. In many instances the communities had no previous intention of establishing a permanent nursing service, and for the most part, these women have had no intention of remaining in rural communities. As a result of the one month of employment, most of the communities have decided to establish a permanent nursing service, and, in the majority of instances, the nurses have decided to remain in the communities in which they were originally employed.

Unfortunately the Chicago School of Physics and Philanthropy, in being taken over by the University of Chicago, has decided to discontinue its course for public health nurses. In view of this fact it appears that there is an urgent need for the State of Illinois to make provision for the training of community nurses in one way or another. It has been suggested that a short course for community nurses be established in connection with the University of Illinois, with the cooperation of the State Department of Health, the Illinois Tuberculosis Association, the American Red Cross and other governmental and extra-governmental agencies. It is quite conceivable that this course may be established in connection with the medical department of the University of Illinois, now in process of development, in the city of Chicago, but it is believed by those of wide experience that a large part of the instruction should be given either at Urbana or Springfield so that the graduates may be especially qualified to deal with the nursing problems of the smaller communities of the State.



## VI. COUNTY TUBERCULOSIS SURVEYS

In every county in which one of the nurses of the Chicago School of Physics and Philanthropy was placed by the Illinois Tuberculosis Association, an intensive tuberculosis survey of the county was made. In some instances these surveys were made in connection with general health surveys conducted by the Division of Surveys and Rural Hygiene of the State Department of Health, but in others, the tuberculosis surveys were made by the community nurse working alone or in cooperation with the local tuberculosis association.

These surveys have brought home to the people the magnitude of the tuberculosis problem and have impressed upon every county the need for sanatoria, dispensaries and nursing service.

It has been demonstrated in the Framingham experiment, at Framingham, Massachusetts, financed by the Metropolitan Life Insurance Company and carried out by the National Tuberculosis Association, that there are 20 tuberculous persons to every annual death in any community. The Framingham experiment has been the most carefully executed piece of community work ever carried out in the United States, and the conclusions derived from it are regarded as conservative and sound. In view of the findings of the Framingham experiment, and in view of the number of deaths from tuberculosis unearthed in the many local surveys that have been conducted during the past year, one must be impressed that the tuberculosis problem of Illinois is one of greater magnitude than has ever been conceived in the past.

## VII. CARE OF RETURNED TUBERCULOUS SOLDIERS

The Division of Tuberculosis of the State Department of Health and the Illinois Tuberculosis Association, take pride in the fact that, before any other agency began to function, these two organizations in their coordinated program, began to make provision for the soldiers, sailors, marines and nurses who returned to their homes in Illinois suffering from pulmonary tuberculosis. Before the American Red Cross was prepared to meet the need and before the United States Public Health Service had been authorized by law to make provision for returned soldiers, the Illinois Tuberculosis Association and the State Department of Health had begun the location and examination of men discharged from service on account of a suspicion of tuberculous disease, and had influenced many of the counties to meet the expense of sanatorium care for these unfortunate persons.

While the American Red Cross has assumed a larger and larger burden in making provision for returned soldiers, and while the Congress of the United States has authorized the United States Public Health Service to give sanatorium and other care to these persons, the Illinois Tuberculosis Association and the State Department of Health have continued their activities, contributing materially to the relief of service

men and women. By a constant program of stimulating the development of as many sanatorium beds as possible; by urging all returned soldiers, sailors, marines and nurses to attend the scores of clinics which have been held throughout the State; by keeping the United States Public Health Service and the Red Cross advised of every tuberculosis case for whom definite provision had been made, and by seeking out through local associations and nursing service all soldiers who might possibly be in need of care, the Division of Tuberculosis and the Illinois Tuberculosis Association have rendered a definite service which has received official recognition and earnest commendation.

#### RECOMMENDATIONS

The Division of Tuberculosis, basing its judgment upon its experience in the past, makes definite recommendations along the following lines:

(1) That the rules and regulations of the State Department of Health for the control of tuberculosis be so modified as to impress upon local health authorities that tuberculosis is not to be dealt with in the same manner as the several acute contagious and infectious diseases. The impression that tuberculosis is particularly infectious among adults and particularly that the trained and careful consumptive is a source of grave danger, have been relegated to the past by modern students of the disease. It is the opinion of the division that a public policy of rigid isolation of ordinary tuberculosis patients or any attempt of rigid quarantine is a mistake and that the question of forcible isolation of any save viciously careless consumptives, should be approached with the utmost reluctance. It is the opinion of the division that local health authorities will make far more progress in the prevention and suppression of tuberculosis if they approach the individual tuberculous patient with the idea of education rather than stringent and mandatory action.

(2) In view of the fact that tuberculosis among adults is almost invariably due to childhood infection and in view of the fact that tuberculosis is an extremely infectious disease to children, the Division of Tuberculosis recommends that the State Department of Health, in the promulgation of rules and regulations and in its educational campaigns, shall lay special stress upon the danger of childhood infection and shall institute all reasonable means to remove all children from contact with tuberculous persons.

(3) It is urged that all public sanatoria for the care of tuberculous persons be provided with quarters for the housing and care of the children of tuberculous parents or other children who must otherwise be in contact with open cases of pulmonary tuberculosis. Such preventoria will serve as a means of saving scores of persons from tuberculous disease who would otherwise necessarily become its victims.

(4) The Division of Tuberculosis recommends that the personnel of the Division be materially strengthened during the next biennium. During the past three years the division has been enabled to participate in a constructive program which would have been impossible without the thoroughgoing cooperation of extra-governmental agencies. The division believes that it is the function of extra-governmental health organizations to carry out pioneer work until they have been able to demonstrate to the public the extent and necessity for such work, whereupon it becomes the part of wisdom for the people themselves to assume the burden of such programs. The Illinois Tuberculosis Association will always prove a valuable ally to the State Department of Health, but should be permitted to engage its resources and its funds in more advanced steps in the study and prevention of tuberculosis, leaving to the State Department of Health the carrying out of those measures already demonstrated as essential to the public as a whole.

## DIVISION OF ENGINEERING AND SANITATION

HARRY F. FERGUSON, *Acting Chief Sanitary Engineer*

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The activities of the Division of Engineering and Sanitation are regulated by the authority given the Department of Public Health and by special provisions in the following sections of article 55 of the Civil Administrative Code:

3. To act in advisory capacity relative to public water supplies, water-purification works, sewerage system, and sewage-treatment works, and to exercise supervision over nuisances growing out of the operation of such water and sewage works, and to make, promulgate and enforce rules and regulations relating to such nuisances;

4. To make such sanitary investigations as it may, from time to time, deem necessary for the preservation and improvement of public health;

5. To make examinations into nuisances and questions affecting the security of life and health in any locality in the State;

6. To maintain chemical, bacteriological and biological laboratories, to make examinations of milk, water, sewage, wastes, and other substances, and to make such diagnosis of diseases as may be deemed necessary for the protection of the people of the State;

9. To make investigations and inquiries with respect to causes of disease, especially epidemics,.....and to make such other sanitary investigations as it may deem necessary for the preservation and improvement of the public health;

13. To enlist the cooperation of organizations of physicians and other agencies for the promotion of the public health in the improvement of health and sanitary conditions throughout the State;

14. To make sanitary, sewage, health and other inspections and examinations for the charitable, penal and reformatory institutions and the normal schools;

15. To inspect, from time to time, all hospitals, sanatoria, and other institutions conducted by county, city, village or township authorities, and to report as to the sanitary conditions and needs of such hospitals, sanatoria and institutions to the official authority having jurisdiction over them;

16. To print, publish and distribute documents, reports, bulletins, certificates, and other matter relating to the prevention of diseases and the health and sanitary condition of the State.

In section 2 of article 21 of the act creating the State Board of Health, the following powers and duties were invested in the State Board of Health: "The board shall have authority to make such rules and regulations and such sanitary investigations as they may from time to time deem necessary for the preservation and improvement of the public health \* \* \*." On the basis of this authority, which by section 1 of article 55 of the Civil Administrative Code is now vested in the State Department of Public Health, the following rules relating to public water supplies, sewerage systems, and ice supplies were adopted



at a meeting of the State Board of Health on April 5, 1916, and became immediately effective:

Rule 1. No municipality, district, corporation, company, institution, person or persons shall install, or enter into contract for installing, waterworks or sewers to serve more than 25 persons until complete plans and specifications fully describing such waterworks or sewers, have been submitted to and received the written approval of the State Board of Health and thereafter such plans and specifications must be substantially adhered to unless deviations are submitted to and receive the written approval of the State Board of Health.

Rule 2. No municipality, district, corporation, company, institution, person or persons shall make or enter into contract for making any additions to, or changes or alterations in, any existing waterworks serving more than 25 persons, when such additions, changes, or alterations involve the source of supply or means for collecting, storing, or treating the water, until complete plans and specifications fully describing proposed additions, changes or alterations have been submitted to and received the written approval of the State Board of Health and thereafter such plans and specifications must be substantially adhered to unless deviations are submitted to and receive the written approval of the State Board of Health.

Rule 3. No municipality, district, corporation, company, institution, persons or person shall make, or enter into contract for making, alterations or changes in or additions to any existing sewers or existing sewage-treatment works, serving more than 25 persons, until complete plans and specifications fully describing such alterations, changes or additions have been submitted to and received the written approval of the State Board of Health and thereafter such plans and specifications must be substantially adhered to unless deviations are submitted to and receive the written approval of the State Board of Health.

Rule 4. Any municipality, district, corporation, company, institution, persons or person, owning or operating a water-purification works or sewage-treatment works, shall submit to the State Board of Health monthly records showing clearly the character of effluents produced.

Rule 5. No municipality, district, corporation, company, institution, person or persons shall offer lots for sale in any subdivision, unless within the boundaries of an area incorporated as a municipality or sanitary district, until complete plans and specifications for sewerage, drainage and water supply have been submitted to and received the written approval of the State Board of Health and thereafter such plans and specifications shall be substantially adhered to unless deviations are submitted to and receive the written approval of the State Board of Health.

Rule 6. No natural ice shall be furnished or vended to the public for domestic purposes until the source of the ice supply has received the written approval of the State Board of Health, which approval is revocable upon evidence being presented or discovered of undue contamination entering the source.

The activities of the Division of Engineering and Sanitation are carried out in accordance with the foregoing rules and the foregoing provisions of the law.

#### PERSONNEL OF THE DIVISION

With the slightly increased appropriation authorized by the Fifty-first General Assembly, it was possible to increase the staff temporarily by the addition of two assistant engineers and an assistant analyst. During the year, however, the division has suffered the loss of Mr. Paul

Hansen, who had been chief engineer since the creation of the division in 1915, and who resigned May 15 to enter private practice. Moreover, during the year, because of the limited funds available and the consequent inability to meet the larger salaries offered elsewhere, the division has lost the services of three assistant engineers. The maximum staff of the division at any time comprised a chief engineer, five assistant engineers, one analyst, one assistant analyst, a laboratory helper, and three stenographers. At the close of the fiscal year the division was short three assistant engineers.

#### ACTIVITIES OF THE DIVISION

The activities of the Division of Engineering and Sanitation, as regulated and prescribed by the Civil Administrative Code and by the rules adopted by the department under the authority of the code may be classified as follows:

1. Investigation and approval of proposed new or improved public water-supply projects and examination of and advice relative to existing public water supplies, including water-purification plants.

2. Investigation and approval of proposed new or improved public sewerage projects, including sewage-treatment plants, and examination of and advice relative to existing sewer systems including sewage-treatment plants.

3. Investigation of stream pollution.

4. Investigation of methods for the purification of sewage and industrial wastes.

5. Examination and certification of water supplies for use on common carriers in cooperation with the United States Public Health Service.

6. Sanitary surveys of municipalities in cooperation with the Division of Surveys with special reference to water supply, sewerage, street cleaning, city wastes collection and disposal, and mosquito eradication.

7. Examination and approval of proposed municipal plumbing ordinances as required under the State law relative to licensing of plumbers and supervision of plumbing.

8. Investigation of nuisances.

9. Investigation of diseases that may be water-borne, such as typhoid fever and enteritis, in cooperation with the Division of Communicable Diseases.

10. Investigation of sites for tuberculosis sanatoria with special reference to water supply, sewage disposal, and drainage, as a basis for approval of such sites as required under the State law.

11. Investigation of sanitary condition of school buildings.

12. Studies of city waste collection and disposal and street cleaning.

13. Studies and advice on malaria control by mosquito eradication.

14. Sanitation of common carriers and construction camps.

15. Inspection of summer resorts.

16. Examinations of public swimming pools and bathing beaches.

17. Laboratory service.

18. State House drinking water supply.

19. Educational work by means of publications, addresses, exhibits, and correspondence.

Full attention has been given to the more important work and a certain amount of work in connection with all the enumerated activities has been carried on. Much of the work the division has been able to do

only to a limited extent is of importance to the health and welfare of the State and sooner or later sufficient funds should be granted to carry on such work if Illinois desires to render the same service to its citizens as that afforded in some of the other states.

Reports have been prepared on all the investigations and examinations made during the year, and copies of these reports are retained in the departmental files and also sent to interested parties. Many of these reports would be of value if published and it is hoped, therefore, that rather complete abstracts of the reports can at some time in the future be published and made available for the use of engineers and sanitarians. These reports give information regarding public water supplies, sewer systems, and various other matters of sanitary importance.

#### WATER SUPPLIES

A public water supply of good sanitary quality and adequate in quantity is undoubtedly the most important public improvement any municipality can undertake. Such an improvement not only is of prime importance as regards the health of the community, but is of great importance from the standpoint of convenience and fire protection. If there is no public supply, then persons must generally depend upon private wells which experience has shown cannot be maintained in satisfactory condition in a built-up community. When a public water supply of questionable quality is available, it is a grave source of danger to strangers in the city who are not aware that it is not considered safe, and also to local persons who disregard instructions not to use the water for drinking purposes. Moreover, an unfit public water supply forces individuals to continue the use of private wells yielding waters of questionable purity. Every effort, therefore, is made to have municipalities install public water supplies; to improve supplies of poor quality and inadequate quantity, and to operate existing waterworks systems so as to insure a continued supply of satisfactory water.

#### PROPOSED NEW WATER-SUPPLY PROJECTS

It is much easier and more satisfactory to have a municipality install a supply of satisfactory quality and quantity, when a water-supply project is under consideration, than attempt to improve an unsatisfactory supply already installed. Special attention, therefore, is given to proposed new projects in order to assist the municipalities in every way possible and to insure that the projects when completed will afford the municipalities satisfactory and adequate water supplies. Field investigations are made to help locate suitable sources of water supply and to advise with municipalities in the development of such sources. It is always recommended that competent engineers experienced in water-supply development be retained, and it is required that plans and specifications, when prepared by the municipalities' engineers, be submitted for review and approval. These activities not only tend to prevent the



installation of inadequate systems, but, in carrying on this work, the division gathers together a large amount of information and data relative to water-supply resources and methods and difficulties of developing and treating different water supplies, which information, in turn, is made available to consulting engineers and municipal officials.

Because of the prevailing high prices, there has been some tendency to delay the installation of new water supplies. Several cities have given consideration to such installations, but have temporarily postponed action.

During the fiscal year, investigations relative to proposed new water supplies were made at the following places: Altamont, Ashland, Burr Oak, Carterville, Dallas City, Eldorado, Oblong, Toledo, Virden, Westville and Witt.

#### PROPOSED IMPROVED WATER SUPPLIES

Many public water supplies in the State were installed primarily for fire protection, flushing and street-sprinkling purposes, and little thought was given, in their installation, to their use for domestic purposes. Other supplies have been installed with the ultimate aim of using them for all purposes but, because of lack of funds, suitable treatment works could not be installed at the start which would render these supplies at all times of satisfactory quality. From the health standpoint, a public water supply that is not always of good sanitary quality is more dangerous than private wells in a community without a public supply. If a private well becomes contaminated, only a few persons are exposed, but if a public supply becomes contaminated, many may be exposed to water-borne diseases. Every effort is made, therefore, by visits to municipalities, by reports, and by correspondence to urge municipalities having inadequate or unsatisfactory supplies to take necessary action to improve them. In some instances this requires only the installation of a treatment plant and in other instances an entire new supply must be developed. The division aids in this work by means of field examinations similar to those made for new projects.

There is a very apparent desire on the part of many municipalities in the State, having unsatisfactory supplies, to improve them but, as in the case of new projects, improvements have been delayed because of prevailing high prices. In addition to improvements in existing water supplies of poor quality it has been necessary in several instances to consider enlargements of waterworks systems because of growth of municipalities and increased water consumption.

During the fiscal year the following places were visited relative to proposed improvement or enlargement of existing water supplies: Carlinville, Carthage, Danville, DuQuoin, Elgin, Jacksonville, Lake Forest, Litchfield, Marion, Mascoutah, Newton, Princeton, Roodhouse, Rushville and West Frankfort.



## EXISTING PUBLIC WATER SUPPLIES

The division has continued making examinations of existing public water supplies and the preparation of complete descriptive reports of such supplies. There are about 475 public water supplies in the State, of which the department has knowledge. Descriptive reports on most of these supplies have been prepared and analyses have been made of samples of water from other places which have not yet been visited. It is the intention to visit the places that have not already been visited, as field examinations often show conditions which cannot be ascertained by a single or even several analyses. This work is carried on as fast as emergency work and other duties permit and many places are visited more than once in order to note improvements or urge improvements which have been found desirable on previous visits.

The department does not have authority to require local officials to remedy any defects noted, but often has been instrumental in bringing about improvements by means of descriptive and advisory reports submitted as result of examinations. In some instances even serious conditions of public water supplies are not corrected when they are pointed out to local authorities, and therefore, the question arises whether it would not be desirable for the State Department of Health to have authority to prohibit the furnishing of a public water supply of unsafe quality or that may become unsafe at any time because of existing conditions.

During the fiscal year, the following places were visited to make examinations of existing public water supplies in addition to those places listed above where improvements were under consideration:

## PLACES VISITED TO EXAMINE EXISTING PUBLIC WATER SUPPLIES IN ADDITION TO THOSE PLACES WHERE IMPROVEMENTS WERE PROPOSED

Aledo.	Galesburg.	Pontiac.
Anna.	Hamilton.	Princeton.
Antioch.	Herrin.	Quincy.
Argo.	Highland Park.	Rankin.
Assumption.	Hillsboro.	Rock Island.
Aurora.	Hinsdale.	Rock Island Arsenal.
Avon.	Hoopeston.	Salem.
Barry.	Joliet.	Savanna.
Bureau.	Kankakee.	Sparta.
Bushnell.	Kewanee.	Spring Valley.
Cairo.	Lawrenceville.	Staunton.
Carbondale.	Lombard.	St. Charles.
Carlinville.	Macomb.	Sterling.
Casey.	Manteno.	Streator.
Champaign.	Menard (prison).	Stronghurst.
Charleston.	Mendota.	Sublette.
Chester.	Minonk.	Taylorville.
Christopher.	Moline.	Tinley Park.
Cissna Park.	Momence.	Tuscola.
Congress Park.	Mounds.	Urbana.
Danville.	Mt. Carmel.	Villa Park.
Decatur.	Mt. Vernon.	Warren.
DeKalb.	Murphysboro.	Warsaw.
Dwight.	Neoga.	Washington.
East Dundee.	New Baden.	Watertown.
Effingham.	Odell.	Watseka.
Elgin.	Olney.	West Frankfort.
Eureka.	Oswego.	Wheaton.
Flora.	Ottawa.	Wilmington.
Freeport.	Pana.	
Galena.	Pinckneyville.	

## WATER-PURIFICATION PLANTS

A special phase of the examination of existing water supplies is the examination of water-purification plants. Some plants are old or of poor design, but even those plants of good design will not furnish good results unless properly operated. The division, therefore, endeavors to help obtain the best possible results from existing purification plants, even though such plants may be defective, until such time as new purification plants can be built, and also endeavors to follow the operation of the plants that are of good design and generally carefully operated. The number of purification plants has materially increased during the past decade and a still further increase will be necessary before the majority of municipalities in Illinois having public supplies from surface sources will have satisfactory supplies. The places where the public water supplies are treated are given in the tabulation.

## SEWERAGE

The public improvement that is probably next in importance to a water-supply system for a municipality is a sanitary sewer system. The installation of such a system makes it possible to eliminate privies, cess-pools, and private drains which are generally filthy, insanitary, and cause nuisances. Privies also are a menace to health because of the possibility of flies carrying infection from them. A sewer system, in addition to bringing about improved sanitary conditions, makes it possible for persons to take full advantage of a public water supply. A number of municipalities have public water supplies, but full advantage of the thousands of dollars invested in them cannot be had because of the lack of adequate sewerage. The division, therefore, endeavors to promote the installation of sewer systems; to control such installations so that they will be satisfactory, and to bring about improvements or enlargements in existing systems. This work is carried on by means of field examinations, reports and correspondence, the same as for public water supplies.

In addition to the examinations made of sewer systems where improvements are proposed or treatment is given, examinations are made of existing sewer systems to ascertain their suitability, the extent to which they are used, and their points of outlets. Many such examinations are made as the result of nuisances arising from defective systems or stream pollution, but some are made as part of complete examinations of public water supplies and general sanitary conditions.

## PROPOSED NEW SEWER SYSTEMS

Since the elimination of privies and cesspools brings about greatly improved sanitary and health conditions, and since such elimination cannot be brought about without the installation of sewer systems, it is an important function of the Department of Public Health to give consideration to the installation of these systems. The installation of a

## PLACES HAVING TREATED WATER SUPPLIES.

Municipality.	Owner-ship.	Source.	Type of plant.	Chemicals used.
Alton	P	Mississippi River	S-RSF	LI-H
Anna State Hospital		Kohler Creek Reservoir	S-RSF	A-H
Aurora	M	Wells		C**
Breese	M	Kaskaskia River	S	LI
Cairo	P	Ohio River	S-RSF	A-H
Carbondale	P	Wells		C
Carlinville	P	Macoupin Creek	S-RSF	A-C
Centralia	M	Morton Branch Reservoir		C
Champaign**	P	Wells		C
Charleston	M	Embarrass River	S-RSF	A
Chicago	M	Lake Michigan		C
Christopher	M	Impounding reservoir		C
Danville	P	Vermilion River	S-RSF	A-C
Decatur	M	Sangamon River	S-RSF	A-C
DuQuoin	P	Mine		C
East St. Louis	P	Mississippi River	S-RSF	A-C
Effingham	P	Little Wabash River	S-RSF	A-C
Elgin***	M	Wells and Fox Rivers	PF	A-C
Evanston	M	Lake Michigan	S-RSF	A-H
Fort Sheridan	US	Lake Michigan	PF	H
Freeport**	P	Wells	S-RSF	L
Great Lakes Naval Stat	US	Lake Michigan	S-RSF	A-C
Hamilton	M	Mississippi River	S-RSF	A-C
Harrisburg	P	Saline River	S-RSF	A-C
Herrin	M	Hurricane Creek Reservoir	S-RSF	A-C
Highland Park	M	Lake Michigan		C
Hinsdale*	M	Wells	S-RSF	LN-A
Johnston City	P	Lake Creek and wells		C
Kankakee	P	Kankakee River	S-RSF	A-C
Kenilworth	P	Lake Michigan	S-RSF	A
Lake Forest	P	Lake Michigan	S-PF	A-H
Lawrenceville	P	Embarrass River	S-RSF	A-C
Macomb	M	Crooked Creek	S-RSF	A-H
Menard State Prison		Springs and Mississippi River		C
McLeansboro	M	North Fork Saline River	PF	A
Moline	M	Mississippi River	S-RSF	A-C
Mt. Carmel	P	Wabash River	S-RSF	A-C
Mt. Vernon	P	Pond and Casey Fork	S-RSF	A-H
Murphysboro	P	Big Muddy River	S-RSF	A-H
North Chicago	M	Lake Michigan		C
Pana	M	Wells and Becks Creek	RSF	A
Peoria***	P	Wells		C
Pontiac	P	Illinois-Vermilion River	S-RSF	A-H
Quincy	M	Mississippi River	S-RSF	A-C
Rock Island	M	Mississippi River	S-RSF	A-C
Rock Island Arse	US	Mississippi River	S-RSF	A-H
Sparta	M	Impounding reservoir	S-RSF	A-H
Springfield***	M	Wells and Sangamon River		C
Streator	P	Illinois-Vermilion River	S-RSF	A-C
Tuscola	P	Wells		C
Warsaw	M	Mississippi River	S-RSF	A-H
Watertown Sta Hospital		Wells		C
Waukegan	M	Lake Michigan		H
Winnetka	M	Lake Michigan		C

S—Sedimentation. RSF—Rapid sand filter. SSF—Slow sand filter. A—Alum. L—Lime. I—Iron. N—Nash. C—Chlorine. H—Hypochlorite.

\* Softening only.

\*\* Iron removal.

\*\*\* Emergency.

\*\*\*\* Supplemental supply.

sewer system involves the question of the disposal of sewage, and though the pollution of streams is not always a health problem, yet it is a natural sequence to the installation of sewers if the sewage is not properly treated, and thus it is properly a function of the Department of Health to examine into and regulate the manner of construction of sewers and sewage-purification plants.

As in the case of water supplies, it is found easier to have a sewer system installed properly at the start than to bring ~~it~~ corrections or improvements to defective systems. Plans and specifications are, therefore, required to be submitted for review and approval in accordance with the rules of the department. Advice is given as to whether a combined or separate system will be the better for a municipality and as to what treatment will be required to prevent objectionable stream pollution. Although the division endeavors to advise with municipalities in the installation of sewer systems, it does not attempt to undertake the engineering work but, as in the case of public water supplies, always urgently recommends that competent engineers be retained by municipalities. This activity on the part of the division has sometimes resulted in preventing installation of systems that would otherwise have been of poor design.

Several projects considered during the year have been delayed because of the high cost of material. During the fiscal year following, the following places have given consideration to the installation of sewer systems and have been visited and given assistance by this division: Fry, Chatsworth, Crystal Lake, Dallas City, Easton, El Paso, Eau Claire, Fairbury, LaHarpe, Lemont, Mason City, McHenry, Mt. Carroll, Morris, Mt. Olive, New Holland, Peoria, Roodhouse and Venice.

#### PROPOSED IMPROVED SEWERAGE

Some sewer systems in the State require improvement or enlargement because of defective design when first installed, or because the municipalities have outgrown the original installations or because the volume of sewage has so increased as to cause objectionable stream pollution. Some municipalities in the State have installed sewer systems piecemeal as occasion demanded, and sooner or later are forced to give consideration to comprehensive sewer systems. Sometimes these improvements can be brought about at nominal cost and, at other times, because of the failure to plan systems properly at the start, considerable expense is involved to correct past defects and to provide for a satisfactory new or improved system.

One of the greatest causes of unsatisfactory sewer systems, especially in the smaller municipalities, is the practice of installing a drainage system originally for storm drainage only, and then, from time to time, allowing house sewers to be connected thereto. Such practice often leads to stream pollution and to flooding of property by sewage-polluted waters.



The division has records of most of the sewer systems in the State and it is the intention to make these complete as opportunity permits. On the basis of these examination records, efforts are made to bring about improved sewer systems. During the past year the following places were visited relative to improved sewerage: Antioch, Bloomington, Chicago Heights, Decatur, DesPlaines, Elgin, Geneseo, Grays Lake, Highland Park, Jacksonville, Kankakee, Mattoon, Mendota, Mound City, Mount Vernon, Pontiac, Streator and Wheaton.

#### SEWAGE-TREATMENT PLANTS

The question of sewage-treatment plants is a part of proposed new systems or proposed improved systems, but is of such importance that it warrants special consideration. Improper disposal of sewage may be dangerous to health although more often it only indirectly affects health and is more in the nature of a nuisance. Improper disposal of sewage may also be destructive of fish life. The treatment or disposal of sewage, though not always a health problem, is so closely interwoven with health and sanitary conditions that the question of sewage treatment can more properly be handled by the State Department of Health, especially with its technical staff and laboratory facilities, than by any other State agency.

In the installation of new sewer systems, studies are made to ascertain what treatment will be necessary to prevent objectionable stream pollution and the best location for sewage-treatment plants. The consulting engineers for municipalities are cooperated with and the designs for sewage-treatment plants and the final plans and specifications are, in accordance with the rules of the department, submitted for review and approval. In this way stream pollution is often prevented.

It is often the case that tank treatment alone will be satisfactory when a sewer system is first installed, but that additional treatment will be necessary at a later date, when the volume of sewage has materially increased and, therefore, the division endeavors to see that the first installations are made so that additional treatment works can be added at minimum expense.

In those instances where sewer systems have already been installed and do not include sewage-treatment works and objectionable stream pollution prevails, examinations are made and the municipalities are advised as to what is necessary to remedy the conditions.

Experience has shown that there is a strong tendency among municipalities to neglect the operation of sewage-treatment plants. It is a common, fallacious idea that sewage-treatment works require little or no attention, and consequently they are neglected until objectionable conditions prevail because of odors from the plant or because of stream pollution. Some sewage-treatment plants have been so neglected that

they have become permanently damaged and can be put back into operating condition only at considerable expense.

The division makes inspections of existing sewage-treatment plants, to note their condition and to call the attention of local authorities to any apparent neglect. In pointing out defects in operation, the importance of municipalities engaging competent operators or retaining the engineers who designed the plants to make periodic inspections is emphasized.

The burden of constant control of sewage-treatment plants should not be borne by the State, but rather the municipalities should retain competent engineers to make sufficiently frequent examinations to insure proper operation. The State should, of course, supplement the work of these engineers and employees by periodic inspections of the plants at reasonable intervals to check their operation and give advice which can often be based upon the experiences at other treatment plants.

During the fiscal year, the following places were visited relative to existing sewer systems and the operation of existing sewage-treatment plants in addition to those places visited where enlargements or improvements were under consideration: Aledo, Arlington Heights, Ashton, Bushnell, Cambridge, Christopher, Downers Grove, Dwight, Elmhurst, Flossmoor, Great Lakes Naval Training Station, Greenville, Hoopeston, Kewanee, LaGrange, Lombard, Manteno, Neoga, Olney, Palatine, Pana, Pontiac, St. Charles and West Chicago.

#### STREAM POLLUTION

There are many cases of stream pollution in the State caused by untreated or inadequately treated sewage and industrial wastes. All cases of stream pollution are not seriously objectionable. Whether or not objectionable pollution prevails depends upon the use made of the water, the proximity of habitations, and the use made of the land bordering the water courses. In some cases, extreme pollution of water courses does not prove objectionable in any way, and in other cases even small pollution is very objectionable. Every problem of stream pollution must be solved in the light of local conditions.

Studies in connection with stream pollution have been carried on generally in cooperation with the Division of Waterways of the Department of Public Works and Buildings, which, under the law, has certain jurisdiction over pollution when such is caused by industrial wastes. At the present time, there is no law giving adequate jurisdiction to any State agency over stream pollution when caused by domestic sewage. The laws give riparian owners power to institute court proceedings and the division can always be called upon to testify at such hearings.

Because of the technical staff of the Division of Engineering and Sanitation and the laboratory equipment, this division is especially well qualified to carry on stream-pollution work and might properly, and

to the advantage and economy of the State, be given full authority over such problems. The sewage and waste discharged into streams have very little bearing upon the stream flow or stream channels or obstruction of water courses, but are important largely from the standpoint of health and nuisance. Moreover, the question of stream pollution is related to the installation of sewer systems, which directly or indirectly are problems for health authorities.

During the fiscal year, investigations of stream pollution were made at the following places: Blue Island, Charleston, Chicago Heights, Christopher, Dakota, Danville, Depue, DesPlaines, Downers Grove, Havana, Hoopeston, Pekin, Peoria, Rochelle, Round Lake and Stockton.

#### TREATMENT OF INDUSTRIAL WASTES AND SEWAGES

The division has continued to study methods of treatment of sewage and industrial wastes and has advised with municipal officials and industries as to the methods of such treatment in order to prevent or abate objectionable stream pollution. It is not considered the proper function of the department to prepare plans for treatment plants; but it is considered extremely desirable to give municipalities and industries the advantage of the experience the division has had in connection with examination of industrial wastes and sewage-treatment plants throughout the State and studies of current literature on the subject.

Pollution by industrial wastes also is frequently involved with pollution by domestic sewage. Often the industries are entirely willing to act to prevent objectionable stream pollution if they can be advised as to how to proceed. Treatment of industrial wastes is often a more difficult problem than treatment of domestic sewage, and the effect of industrial wastes on sewage when combined preceding treatment, is sometimes a rather complicated one. It would seem desirable to allow for an increase in the division in order to go into this work more thoroughly.

During the fiscal year visits have been made relative to treatment of industrial wastes to the following places: Ava, milk wastes; Dakota, creamery wastes; Elgin, test on sewage screen; Eureka, cannery wastes; Pekin, corn-products wastes; Rochelle, cannery, wool, and gas-plant wastes; Round Lake, creamery wastes; Stockton, cheese-factory wastes, and Washington, cannery wastes.

#### DRINKING WATER SUPPLIES FOR COMMON CARRIERS

The cooperative arrangement between the State Department of Public Health and the United States Public Health Service, perfected during the latter part of 1918, for the examination and certification of water supplies used on interstate common carriers has been continued. Under this arrangement, the department makes field examinations of all sources of water supplies used on interstate carriers and analyses of water from such sources. On the basis of these examinations and analyses.

recommendations are made to the United States Public Health Service as to whether or not the water supply should be certified or prohibited for use. It is expected that each source of supply will be examined once a year and analyses made twice a year or oftener. Although the cooperative work and the jurisdiction of the United States Public Health Service relates only to interstate carriers, the division has extended the work to cover also intrastate carriers.

This work has brought about improvement in many private sources of water supply from which water was obtained for common carriers and which had not been previously examined by this department. It has also been instrumental in forcibly bringing to the attention of public officials defects in public water supplies. The cooperation received from railroad and waterworks officials in this work has been extremely gratifying. In addition to the examination of the sources of supply and the making of analyses, attention has been given to the method of handling the water from the source to the car tanks. This is quite important for, although water may be safe at its source, it may readily be contaminated in the handling. This work has placed additional duties on the engineers of the division and increased the amount of laboratory work. There are 156 watering points now in use in 80 municipalities in the State. During the fiscal year 83 places, in which one or more watering points were located, were inspected and 693 samples were analyzed. The watering points examined during the year are located at the following places:

Alton.	Eldred.	North Chicago.
Anna.	Evanston.	Ottawa.
Aurora.	Flora.	Pana.
Beardstown.	Forrest.	Pekin.
Belleville.	Freeport.	Peoria.
Bement.	Galena.	Pinckneyville.
Bloomington.	Galesburg.	Pittsfield.
Brooklyn.	Gilman.	Pontiac.
Bureau.	Golconda.	Quincy.
Bush.	Grafton.	Rankin.
Cairo.	Granville.	Rockford.
Carbondale.	Harvard.	Rock Island.
Carlinville.	Havana.	Roodhouse.
Champaign.	Highland Park.	Salem.
Charleston.	Highwood.	Savanna.
Chicago.	Hume.	Seneca.
Chillicothe.	Jacksonville.	Shawneetown.
Cissna Park.	Joliet.	Springfield.
Crystal Lake.	Kankakee.	Spring Valley.
Cypress.	Kempton.	Staunton.
Danville.	Marion.	Sterling.
Decatur.	Mendota.	Streator.
DeKalb.	Minonk.	Taylorville.
Dupo.	Momence.	Toluca.
Dwight.	Mounds.	West Chicago.
East Peoria.	Mt. Carmel.	Wheaton.
East St. Louis.	Mt. Vernon.	Zearing.
Effingham.	Murphysboro.	

The following list shows the common carrier water supplies certified, provisionally certified, or condemned during the fiscal year:



## COMMON CARRIER WATER SUPPLIES

## CERTIFIED

Beardstown (2).	Freeport.	Pana (a2).
Belleville.	Galena.	Pekin (2).
Bement (a2).	Galesburg.	Peoria (2).
Bloomington.	Gilman (2).	Pontiac.
Bureau (2).	Golconda (c) **.	Quincy.
Bush (b).	Harvard (a).	Rockford.
Cairo.	Havana (2).	Rockford (a).
Champaign (2).	Hume (a).	Rock Island (2).
Champaign (a)*.	Joliet (2).	Roodhouse (a).
Chicago (2).	Joliet (a2).	Rossville (2).
Chillicothe.	Kankakee (2).	Shawneetown (a2).
Chillicothe (a).	Kempton.	Spring Valley (2).
Cissna Park.	Mattoon (2).	Streator (2).
Clinton (2).	Mendota.	Taylorville (a).
Cypress (a).	Momence (2) **.	Urbana (2).
DeKalb.	Mt. Vernon (2).	Villa Grove (2).
Dwight (2).	Murphysboro (2).	Wheaton.
Forrest (a).	Ottawa (2).	

## PROVISIONAL CERTIFICATION

Anna.	Eldred (a).	Mt. Carmel.
Aurora.	Freeport.	Pittsfield (a).
Danville.	Golconda (c).	Rankin (a) **.
Decatur.	Granville (a).	Salem (d).
East St. Louis.	Highwood.	Seneca (a).
Effingham.	Mounds.	Toluca.

## CONDEMNED

Bluffs (a).	Galesburg (a).	Pittsfield (a).
Centralia (a).	Grafton (a).	Rankin (a).
Cypress (a).	Jacksonville.	Salem (a)*.
Eldred (a).	Minonk.	Seneca (a).
Findley (a).	Momence.	Spring Valley (a).
Flora.	Mt. Carmel (a).	Toluca (a).
Forrest (a).	Pana.	

N. B.—Water from public supply unless otherwise noted. a=private well. b=condensed steam. c=cistern. d=distilled water. \*=two different supplies. \*\*=certified after necessary changes. 2=supply certified twice during fiscal year.

## SANITARY SURVEYS

The division has continued to cooperate with the Division of Surveys and Rural Hygiene in making sanitary surveys of municipalities. In such surveys this division makes examinations of public water supplies, sewerage conditions, street-cleaning equipment, organization, methods and results, and collection and disposal of municipal wastes, including garbage, ashes, and rubbish. The question of drainage and its relation to eradication of mosquito-breeding places is also considered. As a result of this work, reports are prepared descriptive of existing conditions and a general scheme for improving any defects is outlined which is serviceable for the city in carrying out improvements and in engaging competent engineers in connection with needed improvements.

During the fiscal year cooperative surveys have been made at Alton, East St. Louis, and Moline.

## MUNICIPAL PLUMBING ORDINANCE

In accordance with section 5 of an act providing for the licensing of plumbers and supervision and inspection of plumbing, in force June 29, 1917, the division has continued to advise with municipalities in the preparation of the plumbing ordinance required by law. The plumbing

ordinance prepared by the division in 1917, to serve as a guide for municipalities in the preparation of such an ordinance, has been furnished municipalities and plumbers. Because of the press of other work it has not been possible to revise this ordinance which, though it is generally satisfactory, could be materially improved. It has not been possible actively to follow up this work and ascertain what municipalities have adopted the ordinance or what variations have been made in ordinances adopted.

It should not be a function of the State Department of Health to supervise plumbing work in municipalities, but it would seem highly proper for the State to make provision for this division to keep informed and give careful consideration to modern plumbing practice, to serve in an advisory capacity to municipalities and individuals, and to be called in in case of disagreement between plumbers and municipal officials. Increase in funds would permit the division to see that municipalities were complying with the law by the adoption of a suitable plumbing ordinance, its enforcement, of course, coming under the jurisdiction of local officials.

#### NUISANCE COMPLAINTS

During the fiscal year many letters were received complaining of nuisances and unsanitary conditions. These complaints covered a wide variety of subjects and are listed in the following tabulation:

#### CLASSIFIED NUISANCE COMPLAINTS

Alleged cause of nuisance.	Number of complaints.
Impure water supplies.....	4
Polluted wells .....	9
Iron in water.....	1
Water shortage .....	4
School water supply.....	1
Impure factory water.....	2
Mine water supply.....	6
Sewers .....	10
Sewage disposal .....	14
Cesspools .....	6
Toilet facilities .....	2
Privies .....	19
Defective drainage .....	23
Stream pollution .....	7
Ditch pollution .....	7
Defective plumbing .....	3
Corn wastes .....	1
Catsup-factory wastes .....	1
Insanitary restaurants and hotels.....	14
Insanitary buildings and dwellings.....	6
Insanitary factory .....	1
Stables and barns.....	4
Manure .....	2
Hitch racks .....	4
Feed lots .....	4
Hog pens .....	60
Foultry houses .....	3
Chicken yards .....	3
Meat markets .....	1
Slaughter houses .....	6
Stock yards .....	4
Cattle near habitations.....	2
Cider press .....	1

Spoiled meat .....	1
Tankage plants .....	2
Carcasses .....	9
Weeds .....	6
Junk yard .....	3
Dumps .....	8
Garbage and filth.....	16
Dust, smoke and fumes.....	11
Insanitary construction camps.....	1
Insanitary schools .....	5
Inadequate schools .....	1
Ventilation .....	3
Fire in peat marsh.....	1
Cuspidors .....	1
General insanitary conditions.....	16
<b>Total .....</b>	<b>320</b>

The number of nuisance complaints has materially increased over those received during the preceding year. The policy of handling these complaints has continued the same. Since, under the laws, the Department of Health has no jurisdiction over local nuisances and insanitary conditions unless they are responsible for an epidemic and local officials refuse to act, it is customary to refer the complaints to local officials who have full authority to declare what constitutes nuisances and take necessary action to have them abated. Consequently, when letters of complaint are received, the complainant is informed of the authority vested by law in the local officials and a letter is sent to the local officials stating that a complaint has been made, describing the character of the complaint, and requesting that an investigation be made, any necessary action be taken, and the State Department of Health informed as to the results of the investigation and action.

In many cases the conditions that are the subject of complaint had not been brought to the attention of the local officials and were corrected at once. In some cases, the local officials have delayed or neglected to take action but have cooperated in improving conditions upon receipt of the letter from the State Department of Health. In some cases the local officials neglect or are incompetent to enforce necessary improvements. In other cases there are no real bases for complaints and the complaints are more or less the result of neighborhood quarrels.

It would be impracticable and it would require a large traveling expense fund and corps of inspectors for the State to investigate all such nuisance complaints, and moreover, the majority of the complaints can be adequately handled by local officials when they are brought to their attention. Some of the complaints, however, involve conditions that require investigation by or assistance of trained sanitary engineers to guide municipal officials in dealing with the situation, and in such cases the assistance of this division is given. Many such investigations are made at the request of local officials for advice, so that they may properly handle the situation. During the fiscal year the following places were visited relative to nuisance investigations:

## PLACES VISITED RELATIVE TO NUISANCES AND GENERAL SANITARY CONDITIONS

Place.	Cause of nuisance.
Augusta .....	Defective drainage and privies.
Bartonville .....	Drainage from coal mine.
Belleville .....	Garbage hog farm.
Carlinville .....	Dirty streets.
Caseyville .....	Garbage hog farm.
East Peoria .....	Insanitary conditions at railroad yards.
East St. Louis .....	Garbage hog farm.
Glen Ellyn .....	Improper drainage.
Herrin .....	General insanitary conditions.
Hillsboro .....	Improper sewage disposal.
Hoopeston .....	Fumes and dust from chemical works.
Hume .....	Insanitary conditions.
Kankakee .....	Garbage dump.
Kankakee .....	Rendering plant.
Litchfield .....	Stagnant pond.
New Baden .....	Improper sewage disposal.
Ottawa .....	Fumes and smoke from factory.
Pontiac .....	Hogs.
Rockford .....	Sewage from sanitarium.
Rushville .....	Wastes from product company.
Stonington .....	Improper drainage.
Tamms .....	Sanitary conditions of hotel.
Tiskilwa .....	General insanitary conditions.
Tolono .....	General insanitary conditions.
Valier .....	General insanitary conditions.
Ziegler .....	General insanitary conditions.
Zion City .....	Improper sewage disposal.

## WATER-BORNE EPIDEMICS

The division cooperates with the Division of Communicable Diseases when epidemics of disease occur which may be water-borne, such as typhoid fever and dysentery. The division also endeavors to bring about abandonment of interconnections between public water supplies of good quality and impure industrial supplies that might be the cause of water-borne diseases. During the year the division made or assisted in making investigations of epidemics at Bardolph, Bloomington, Joliet, Mt. Carmel, Peoria, and Ramsey.

The most important investigation of a water-borne epidemic, in which the division cooperated with the Division of Communicable Diseases, was the outbreak of typhoid fever which occurred among the employees at the shops of the Chicago & Alton Railroad at Bloomington. This epidemic comprised over 200 cases with 24 or more deaths. The inter-connection which was responsible for the epidemic was abandoned and a new water-supply distribution system installed, which system was examined by the division at the request of Chicago & Alton Railroad officials, railroad employees, and municipal officials.

## TUBERCULOSIS SANATORIA

The division cooperates with the Division of Tuberculosis in the examination of sites and review of plans for county tuberculosis sanatoria, which sites and plans, according to the State law, must have the approval of the State Department of Public Health. The work of this division in this connection relates to water supplies, disposal of sewage, general drainage, and general sanitary conditions of surroundings. In some instances the availability of public water supplies and sewer systems



makes the problem a rather easy one, but in other instances separate water supplies must be developed and suitable means provided for disposal of the sewage.

During the fiscal year investigations were made and plans reviewed in connection with county tuberculosis sanatoria for Kane, Lee, McLean, and Tazewell Counties.

#### SANITARY INSPECTIONS OF SCHOOLS

The division has continued to make sanitary inspections of schools. Most of these inspections are made at the request of county superintendents of schools in accordance with the State law. As a result of the inspections reports are prepared, copies of which are sent to the county superintendent of schools, the State Superintendent of Public Instruction and, in some cases, to the local school authorities. These reports describe existing conditions and make specific recommendations for improvements when such are found desirable.

The investigations cover such items as (1) location and accessibility of school buildings; (2) character and suitability of school sites as regards area, general drainage, and surrounding conditions; (3) construction and adequacy of school buildings; (4) lighting; (5) heating; (6) ventilation; (7) toilet facilities; (8) water supply; (9) school furniture, and (10) interior decorations with reference to suitability of colors.

During the fiscal year, sanitary inspections of schools were made at the following places: Brookport, Clinton, Danville, Hume, Ladd, Manteno, Metropolis, Pontiac, Rockford, Shipman and Streator.

The sanitary inspection of school buildings is considered extremely important as insanitary conditions not only affect the health of the children, but improved sanitary conditions may be considered as an important item of training for the children. The children should be surrounded with the best of sanitary conditions in order that they may learn the advantages of such conditions, and this, in turn, will bring about improvement in general sanitary conditions at home. It would seem a desirable expenditure of money for the State to provide sufficient funds so that the State Department of Health could undertake on its own initiative, a study of all school buildings in the State instead of having to give consideration only to those that are brought to the attention of the department by county superintendents, or local school officials, or interested parents.

#### MUNICIPAL WASTE COLLECTION AND DISPOSAL

Studies of municipal waste collection and disposal and street cleaning are very important phases of sanitary engineering, but are less important from the standpoint of public health than the question of public water-supply and sewer systems. The division, therefore, has not actively undertaken such studies. The only places where such studies have so far

been made have been at Alton, East St. Louis, and Moline where the studies were part of the sanitary survey in cooperation with the Division of Surveys.

Waste collection and disposal and street cleaning in many municipalities are now given too little consideration and if the division were large enough to give proper consideration to this matter undoubtedly it would prove to be of great service to municipalities, not only in improving sanitary conditions but in bringing about more economical methods of doing such work.

#### MALARIA CONTROL BY MOSQUITO ERADICATION

The records of the Division of Vital Statistics show that malaria is quite a prevalent disease in certain parts of Illinois, especially in the southern portion of the State. Since it has been conclusively demonstrated that malaria is spread only by means of mosquitoes, the eradication of mosquitoes, by suitable drainage and the consequent elimination of breeding places, would reduce the number of cases of malaria and thereby effect a large economic saving to the State. Moreover, in some places, though malaria does not prevail, serious nuisances are caused by mosquitoes which tend to decrease usability and, therefore, the value of land. During the year, advice has been given by correspondence to several communities relative to mosquito eradication and inspections have been made at Litchfield. The staff of the division has not been adequate to undertake a survey of the State to define areas where mosquito eradication work would be desirable. Such a survey should be undertaken by the State.

#### SANITATION OF COMMON CARRIERS AND CONSTRUCTION CAMPS

The State Department of Health has now under consideration the adoption of a railway sanitary code, based upon the Railway Sanitary Code issued by the Committee on Health and Medical Relief of the United States Railroad Administration and approved with certain changes at the Conference of State and Provincial Health Authorities at Washington, D. C., in May, 1920. This code relates to sanitary conditions on common carriers, at railway stations, and at construction camps. It covers quite completely all matters that might affect the health of persons traveling on common carriers, using railway stations, or living in construction camps. Its adoption will place new duties upon this division and require an increase in staff to enforce it and advise with proper authorities in bringing about any necessary improvements.

#### INSPECTION OF SUMMER RESORTS

During the fiscal year, as in preceding years, owing to lack of personnel it has not been possible for the division to make inspections of all summer resorts at the beginning of the vacation season to insure that the water supply, sewerage, and general sanitary conditions are satisfac-

tory. This work would be extremely desirable because the summer resorts are visited by persons from all over the State and if persons become infected because of insanitary conditions at resorts, they may, on their return to their respective homes, serve as foci of infection for their communities. Because summer resorts are in use only a small portion of the year, there is a tendency for some owners and some persons visiting the resorts to neglect sanitary conditions. The buildings are often of a temporary character, and the water supply and sewerage conditions are frequently quite primitive. Since most of the summer resorts are outside of incorporated areas and thus not under the jurisdiction of any local health authorities, except the township officials, it should more than ever be the duty of the State to protect the health of the people by adequate inspection of such places. This work would require the attention of at least one man during the summer months.

#### SWIMMING POOLS AND BATHING BEACHES

The rapid increase in the number of swimming pools and bathing beaches is placing upon the division additional duties. The division is receiving requests from citizens for advice relative to the construction or operation of swimming pools and bathing beaches. It would seem proper for the State not to confine its attention to those pools and bathing beaches for the care of which advice is requested, but to undertake on its own part a study of all pools and bathing beaches similar to studies and investigations of public water supplies. To this end a circular letter has been sent out to all municipalities of 3,000 population and over and will be sent out to the remaining municipalities during the coming year. With the circular letters are sent blank forms which are to be filled in giving information about each pool.

It is hoped that the staff of the division may be increased so that the circular letters can be followed up by an inspection by a sanitary engineer of every pool and bathing beach in the State. Because of its laboratory facilities, the division is well qualified to carry on such work for field examinations of pools and bathing beaches as should be supplemented by analyses. Similar work is now being done in several other states and has been considered so important that a committee has been appointed by the American Public Health Association to study the question of swimming pools and bathing beaches in order that such may be standardized insofar as desirable and data collected which will be valuable to persons having supervision or control of pools and bathing beaches.

#### LABORATORY SERVICE

The laboratories of the Division of Engineering and Sanitation are maintained to make chemical and bacteriological examinations of water, sewage and industrial wastes. The work performed by the laboratory can be classified as follows: (1) Routine analyses of samples of water collected from existing water supplies with special emphasis on filtered

supplies or supplies of questionable character; (2) complete analyses of waters from proposed sources of supply to determine not only their sanitary quality but also their suitability for domestic and industrial use as regards mineral content; (3) microscopic examinations of water from public supplies where disagreeable tastes and odors are present or liable to occur; (4) analyses of all drinking water supplies used on common carriers; (5) examination of chemicals and sand used in water-filtration plants; (6) analyses of water from private wells, schools, etc.; (7) analyses of water from cisterns if used for drinking purposes; (8) analyses of samples of water from streams and rivers to indicate the presence and the degree of pollution; (9) analyses of raw sewage and effluents from sewage-treatment plants to determine the efficiency of the treatment plants and the extent to which the sewage or effluents will pollute the streams; (10) analyses of trade wastes to determine possibility and method of treatment and effect of their discharge into streams.

Analyses of water supplies, sewages, and trade wastes are made upon the initiative of the division and upon requests of waterworks and public officials and interested citizens and, in the case of private wells, upon requests of the owners or users of the wells. In reporting the results of the analyses of water supplies which are unfavorable, opinions are given as to the possible causes of the contamination and recommendations are made as to how contamination can be prevented. For water supplies, only those analytical determinations are made which are essential to show the quality of the water and time-consuming determinations that are of no value are omitted. For instance, a complete chemical analysis of water from a private dug well would be of little value, as the chemical content of the water may vary greatly with rains, but the determination of the sanitary quality by means of a few tests is of value and it is an opinion of the sanitary quality that the average person desires. Special tests and complete chemical and bacteriological analyses are made when they are deemed desirable.

The frequency of analyses of public water supplies depends upon the sources of the supplies and the possibility of their contamination. Special attention is given to those supplies where water-purification plants exist or the supplies are considered of doubtful quality. At the end of the fiscal year over half of the water-purification plants were under close analytical supervision, and arrangements are being made to enlarge this work.

Analyses are made of the common carrier water supplies at intervals of from one month to six months, depending upon their source and liability of contamination.

Analyses of private wells are made upon request, provided complete descriptions of the wells and surroundings are given on blank forms furnished for that purpose. This information about the wells is necessary in order to give proper interpretations of the analyses and opinions



as to possible causes of contamination. In some cases, the location and physical conditions of wells are sufficient to condemn them, and this information is then of more value than a single or even several analyses.

Analyses of water from polluted streams, sewages, effluents from sewage-treatment plants, and industrial wastes are made as occasion demands. More of this work should be undertaken upon the initiative of the division, especially in connection with studies of sewage-treatment plants, but the limited laboratory staff and size of laboratories has so far made it impossible. By increasing the amount of this work an improvement in the operation of sewage-treatment plants can be brought about and stream pollution decreased.

A special container for the shipment of samples of water by parcel post has been devised. Formerly all samples for bacteriological examination were shipped by express in containers that provided for packing the samples in ice. Experience showed that express offices were not always near or accessible to persons wishing analyses, especially of private wells, and that easier and more rapid service could be had by parcel post. These containers are sent out in the regular parcel post mail and returned with the sample of water by parcel post special delivery at a total mailing cost of 17 cents, or much less than would be the cost by express. Moreover, a saving is made in the cost of the larger and heavier containers required for express shipments. The results of analyses of the samples sent un-iced by parcel post have proved reliable.

During the fiscal year a total of 1,583 samples were analyzed in the laboratories, which is an increase of 55 per cent over the preceding year. Table XII shows the analyses classified as to source and by months. The greatest number of samples handled in any one month was 198 in October, 1919, and the lowest number was 66 in December, 1919. During December, 1919, and January, 1920, the number of samples that could be handled was much below the average because the position of assistant analyst was vacant. The number of requests for analyses is so rapidly increasing and the increased laboratory work that the division should undertake is so important that an increase in funds, laboratory staff, and laboratory space and equipment is imperative.

#### STATE HOUSE DRINKING WATER SUPPLY

The operation of the two pressure filters installed in the early part of 1918 in the laboratories of this division for the removal of turbidity and color from the municipal water supply has been continued. The municipal water supply is of satisfactory sanitary quality, but because of the presence of iron and manganese becomes at times turbid and unsatisfactory for drinking purposes. By the installation of pressure filters to overcome this difficulty, it was possible to use the municipal supply and to discontinue the purchase of bottled water by the State at a saving that has amounted to about \$4,000 a year, even allowing for

the cost of the filters and bottles. During this fiscal year 10,403 bottles were filled and distributed to the 84 water coolers throughout the Capitol Building. The decrease in the number of bottles of water used over the preceding year (12,961) is probably because the legislature was not in session.

TABLE XII—ANALYSIS MADE DURING THE FISCAL YEAR JULY, 1919-JUNE, 1920—CLASSIFIED AS TO SOURCE AND BY MONTHS.

Month.	Supplies used on common carriers.		Other public supplies.	Private wells.*			**Miscellaneous.	Totals.
	Public supplies.	Private wells.		Safe.	Safe with alterations.	Unsafe.		
July.....	24	5	19	3	5	28	16	100
August.....	10	5	30	2	18	59	2	126
September.....	39	12	27	5	14	63	-----	166
October.....	82	21	23	1	20	46	5	198
November.....	49	17	42	5	15	10	17	155
December.....	16	14	6	2	6	6	8	58
January.....	19	4	18	1	7	7	10	66
February.....	41	12	29	1	6	8	5	102
March.....	69	18	41	2	10	14	5	157
April.....	51	12	15	3	13	15	2	111
May.....	59	13	48	10	11	17	4	167
June.....	73	23	23	4	18	29	11	177
Total.....	532	161	321	39	143	302	85	1,583

\* Includes school wells, semi-public wells, and cisterns.

\*\* Includes analyses of sewage, sewage effluents, ice, bottled waters, and chemicals.

The city of Springfield has under consideration the installation of an iron-removal plant that will eliminate the necessity of the operation of the filters by this division, but since the saving has amounted to about \$4,000 a year in addition to the cost of the filters it can be seen that their installation was an excellent investment.

#### EDUCATIONAL WORK

The educational work of the division consists of preparation of articles for publication in periodicals, bulletins, and newspapers, the making of public addresses on sanitary engineering and miscellaneous sanitary subjects, and preparation of an exhibit as a part of the exhibit of the department for the State Fair and county fairs.

Articles for publication must be such as to attract the interest of persons reading the respective publications and articles for newspapers must, of course, be somewhat brief and have news value. The majority of the lengthy articles have been prepared for publication in the monthly *Health News* issued by the department. Many of the articles for *Health News* are of value for permanent reference and additional copies of *Health News* are printed so as to be available for sending out in answer to requests for information on subjects covered by such articles.

Public addresses have been confined largely to informal talks before city councils, chambers of commerce, or other civic associations relative

to water supply and sewerage projects and general sanitary improvements.

During the fiscal year the following places were visited to give talks in addition to places where talks may have been given as a part of other work in connection with water-supply or sewerage projects: Champaign, Chicago, Decatur, Eureka, Litchfield, Moline, Mt. Morris, New Orleans, La., Pana, Princeton, Quincy, St. Louis, Mo., Virden.

A considerable amount of educational work is carried on by means of correspondence. Many letters are received requesting information relative to proper construction of wells, septic tanks, small sewerage installations, and general sanitary matters. In answering letters of complaint relative to nuisances, opportunity is also given to do educational work along sanitary lines.

#### MISCELLANEOUS INVESTIGATIONS AND SUMMARY.

In addition to the places listed in the preceding tabulations, miscellaneous investigations have been made at the following places: Bryant, imperfect drainage; Danville, garbage incinerator; Elgin sanitary conditions following tornado; Herrin, mine wash-water; Highland Park, bottled waters; Hinsdale, garbage incinerator; Joliet, housing conditions; Marengo, ice company well; Moline, factory fire systems; Naperville, ice supply; Pontiac, sewerage for county club; Princeton, proposed sanitary ordinance; Taylor Springs, water supply of American Zinc Company; Toledo, sanitary ordinance; Valier, mine wash-water.

The visits made and work done, other than laboratory work, during the fiscal year may be summarized in the following tabulation:

Visits made and reports prepared relative to:	
Proposed new water supplies.....	11
Proposed improved water supplies.....	15
Existing water supplies.....	171
Proposed new sewer systems.....	19
Proposed improved sewer systems.....	18
Sewage-treatment plants .....	24
Stream pollution .....	16
Treatment of industrial wastes.....	9
Common carrier water supplies.....	83
Sanitary surveys .....	3
Nuisances .....	27
Epidemics .....	6
County tuberculosis sanatoria.....	4
Sanitary condition of schools.....	11
Miscellaneous subjects .....	15
Talks, addresses and association meetings.....	14
Letters written, (approximately).....	3,200

#### RECOMMENDATIONS FOR FUTURE DEVELOPMENT AND LEGISLATION

The comparatively small funds appropriated for the division and the consequent small staff does not make it possible for the division to carry on, as thoroughly as would be desirable, the activities mentioned near the beginning of this report. In order to carry on in a thorough and satisfactory manner the activities of the division, the staff should be increased.

At the present time certain work which might properly be done by this division of the State Department of Health rather than by any other State agency is now handled in other State departments. All State work in connection with public water supplies should be handled by the State Department of Health and all analytical work in connection with public water supplies should be done in the laboratories of the State Department of Health. At the present time, considerable confusion is caused to waterworks and public officials because of the duplication of work done by the Department of Health and by other State agencies. A correction of these conditions can be brought about by a change in the Administrative Code at the next session of the legislature.

The question of stream pollution is rapidly becoming a more serious problem than has heretofore existed in Illinois. At the present time, work in connection with stream pollution is divided among State agencies and no State agency, nor all agencies combined, has sufficient authority by law to handle the problem properly. Stream pollution is largely a sanitary engineering problem and more improvement at much less expense can undoubtedly be brought about by granting the State Department of Health certain authority. The question is closely interwoven with sewer systems and thus directly or indirectly becomes a public health matter. At the next session of the legislature, the laws relating to stream pollution should be clarified and amplified and control placed under the State Department of Health with sufficient authority and funds to carry out the laws.

Rules adopted by the State Board of Health in 1916, relative to the approval of plans for proposed water-supply and sewerage projects have been productive of good results, but better work could be done if these rules were embodied in laws and the department given an increase in funds properly to carry out the provisions of the law.

The division is accumulating a considerable amount of information relative to water supplies and sewerage that would be of interest and value to engineers, city and waterworks officials and others and, therefore, funds should be made available for preparation of this material for publication.



## DIVISION OF VITAL STATISTICS

SHELDON L. HOWARD, *Registrar*

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With the admission of Illinois to the Federal Registration Area for Deaths, effective from January 1, 1918, and with its working force increased to twenty members through appropriations made by the Fifty-first General Assembly, the Division of Vital Statistics has directed its efforts, not only to increasing the degree of completeness of its birth and death records in point of number, but to perfecting a program which should enhance the value of each record from a legal, as well as from a statistical standpoint.

The organization of the division, found to be effective during the previous year in meeting the general requirements of the work, was continued on practically the same lines except for minor changes in the duties of individuals, made in recognition of the differences in ability and proficiency of various new and old employees and in view of the increased divisional personnel. It is believed that great improvement has been made, however, in the execution of work by the rearrangement of the office machinery in such manner as to permit the passing of certificates rapidly from desk to desk when found to be in acceptable form.

As a result of past experience, steps were taken to overcome the common failings on the part of local registrars and others concerned in the carrying out of the provisions of the law, according to the following general lines:

I. *Violations*.—All reports of violations of the State law received from local registrars or from other sources, are listed and made the subject of investigation by correspondence or by field agents. The results of these investigations are made a matter of record with memoranda as to whether or not the cases require prosecution or other drastic action. The records of these violations are kept at all times in convenient form for the use of the Director of the Department of Public Health. At the end of each month the lists of reported violations are prepared in quadruplicate to provide one copy for the director of the department, and working copies for the use of the registrar, the assistant registrar and the file clerk.

The average number of violations of the State law per month, reported during the fiscal year ending June 30, 1920, was 53, and a considerable portion of time of the assistant registrar and of the several field agents has been devoted to the investigation of these violations.

Incidentally, whenever field agents are delegated to investigations of violations of the law, they are advised to employ every opportunity to give added instruction to local registrars, and, in the investigation of complaints, they are instructed to weigh all cases with respect to the natural qualifications of the registrar and the question of wilful violations.

In the enforcement of the law, certain defects in the law itself have become apparent, and it is believed that entirely satisfactory registration cannot be obtained without several distinct changes in the statutes. Recognizing the weaknesses of the present law, particularly as it applies to the selection and status of local registrars, the State Department of Health has endeavored to attain its ends by education and persuasion rather than by prosecution and the imposing of penalties upon men whose natural qualifications have not fitted or prepared them for their duties.

II. *Delinquent Registrars.*—During the latter part of 1919, a daily record of receipts from local registrars was established whereby it was possible constantly to have available information as to all registrars failing to send in their returns promptly on the tenth day of each month, and to these delinquent registrars special notices have been sent as a matter of routine.

Lists of delinquent registrars are prepared for the information of the director of the department at the end of each month, and additional copies of these lists are made for the information of the registrar, the assistant registrar, the file clerk and for the several field agents. During the six months ending June 30, 1920, delinquencies on the part of local registrars had been noted to the number of 2,039, or an average of 340 delinquencies each month, making 22.7 per cent of the total number of local registrars generally delinquent.

The complete compilation of all delinquencies and the placing of delinquent lists in the hands of field agents and of all other persons concerned in complete registration, has kept constantly before them the shortcomings of the individual registrars for guidance in making personal inspections or in corresponding with the affected communities, while delinquent notices sent to registrars at the end of each month, together with personal investigations of field agents, have brought to light the more common misconceptions and misinterpretations of the law among registrars.

To overcome these misconceptions, there has been prepared a series of form letters designed to answer the more common questions of interpretation. These have been employed at a great saving in stenographic service. It has been found necessary to send these letters of additional instructions to about sixty registrars each month, indicating that approximately 20 per cent of the registrars have failed in the past to appreciate or intelligently understand the provisions of the law.

III. *Reports of Local Registrars.*—The habit on the part of many local registrars of transmitting to the division birth and death certificates daily or as frequently as they are received by them, has resulted in an unnecessary waste of postage and expenditure for clerical service, both on the part of the registrar and in the division office. Unnecessary waste of effort has also resulted from misconception on the part of local registrars whereby copies of certificates intended for county clerks, have been transmitted to the division. Confusion has also been created by failure on the part of registrars to observe the geographic limits of their districts. In many instances certificates of deaths, births or stillbirths, belonging in another nearby jurisdiction, have been received without question by the local registrars, transmitted to the division and claim made for fees.

To overcome these errors which, trivial as they may seem, interfere materially with complete and satisfactory registration, the division has devoted itself within the past year to the preparation of form letters directing registrars to make but one transmittal each month and that on the tenth day of the month, as required by the department. Attention has been called to the fact that the Division of Vital Statistics should not receive copies of certificates intended for the county clerk, and a memorandum to county clerks has been prepared asking them to provide for the transfer of credit for registrar's fees in case certificates were received and transmitted by registrars outside their proper jurisdiction. The efforts of the division along these lines have resulted very satisfactorily.

IV. *Completion of Defective Birth Certificates.*—Although the character of birth certificates has been improved during the past year, it is estimated that fully 15 per cent of the certificates received at this time from the smaller cities and rural districts, fail to contain essential data. This is attributed to ignorance of the law or indifference on the part of parents, physicians and local registrars. In many instances the name of the child is lacking, rendering the certificate worthless so far as its future value to the child is concerned.

In every instance communications are forwarded to attending physicians and parents for the purpose of receiving more correct data, and a check record of this work, maintained during a period of several months, shows that at least thirty communications daily have been necessary.

This correspondence with physicians and parents for the purpose of completing birth certificates is in reality the assumption by the State Department of Health of a duty which should be performed by the local registrar, entailing considerable expense to the department and causing the loss of the services of at least one clerk in a staff which is already inadequate. It is believed that this condition can be overcome only by a

provision for the employment of local registrars who shall be more directly under the control of the State Department of Health.

V. *Defective Death Certificates.*—From a statistical standpoint it is essential that all certificates of death shall be correct before they can be tabulated. During the past year it has been found that approximately 10 per cent of the death certificates received by the division are defective in one or more essential detail. During the period of seven months, in which 30,313 deaths occurring in the State of Illinois outside of Chicago were handled, it was necessary to send out 2,925 letters to undertakers, local registrars and physicians for the purpose of making death records complete. In many instances communications forwarded to both undertakers and physicians have failed to produce a satisfactory response and it has been necessary to send further communications to lay informants or members of the family of the deceased.

A study of the sources of defective death records elicited the fact that many of them come from State and county institutions and from public and private hospitals. Consequently field agents for the division have been instructed to visit all public and private institutions for the treatment of the sick and to instruct the managing heads of these institutions to prepare, on the admission of the patient, a complete record containing all of the necessary statistical information. In obtaining more complete records from the State institutions, the division has received the thoroughgoing cooperation of the State Department of Public Welfare, the results being such that it will be possible to employ the methods now prevailing in State institutions as models for county institutions, and for public and private hospitals and sanitarium.

VI. *Medical Classification.*—The method employed by the division to secure more accurate information for medical and occupational classification of death records, was described at length in the Second Annual Report. During the past year the same method has been followed, with certain additional efforts for obtaining complete data in deaths ascribed to "pneumonia" or "broncho pneumonia," and otherwise unqualified, and for deaths attributed to "anemia," "asphyxiation," "burns," "convulsions" and "paresis."

The success attained in improving death records, so far as the cause of death is concerned, is indicated by the fact that during the year 1918, 3,000 transcripts of death certificates were returned by the United States Bureau of the Census for further information, while, for the year 1919, only 869 transcripts were returned. Of these, 600 were transcripts originating in the city of Chicago, and 269 from other sections of the State. For the six months ending June 30, 1920, no transcripts originating in the State, outside of Chicago, have been returned from Washington, and only 312 Chicago transcripts.

In addition to its routine work in classifying the certificates for the current year, the division has devoted all possible time to the classifica-



tion of death certificates received for the year 1916, the certificates for 1917 having already been completed. The division has also been engaged in the occupational classification for the years 1916, 1917 and 1918, in order that this work, which will probably be completed by July 1, 1921, may cover the entire period since the present law became effective.

VII. *Reports of Communicable Diseases.*—During the past year, reports of all deaths ascribed to reportable communicable disease, have been made daily to the Division of Communicable Diseases, while the reports of deaths attributed to venereal disease have been transmitted daily to the Division of Social Hygiene.

VIII. *Occupational Classification.*—With the attainment of a high degree of success in meeting the requirements of medical classification, the efforts of the classification section have been directed toward preparation of a proper standard of death certificates with regard to the feature of occupation, a most important feature from a statistical standpoint, and one to which many of the states have so far given scant attention, and which in Illinois has been almost entirely disregarded.

The progress made in securing complete occupational data is indicated by the fact that, while in January, 1920, it was necessary to refer back for correction one out of every sixteen certificates, conditions had improved during the succeeding three months so that correspondence was necessary in only one of every thirty-five certificates. With certificates received from the city of Chicago it was necessary in January to question one out of every thirteen certificates, while at the end of the fiscal year question was necessary in regard to Chicago certificates in only one out of eighty-seven.

IX. *Registration of Old Birth Reports.*—On account of the new importance attached to registration of births incidental to the World War, and incidental to the increased child labor legislation, there has developed a very great demand for certification of births occurring prior to the time the present act became effective. To meet this demand, blanks have been sent to all applicants with simple instructions as to meeting the requirements of the law and with further instructions to refer the application for certification to the county clerk to make certain that the original certificate of birth is on file with the county official.

X. *Coroner's Certificates of Death.*—On account of the custom prevailing on the part of physicians in the past of preparing certificates of death and presenting them directly to the county clerk, and the former custom on the part of county clerks of receiving these certificates from physicians without scrutinizing causes of death, and of the old custom on the part of physicians of preparing death certificates and forwarding them directly to the State Department of Health, it has been found that many certificates have been accepted from physicians which, on account of cause of death, should have been brought to the attention of coroners. This situation has lead to considerable confusion of more or less legal

moment and the necessary action on the part of the division in referring these activities back with the recommendation for investigation by the coroner, has provoked some resentment on the part of physicians who have erroneously signed the certificates, and considerable concern and distress on the part of members of the families of the deceased.

To obviate these errors, the division has prepared and widely distributed a complete list of "coroner's cases" and this, with the general distribution of a letter of instruction to the coroner, has resulted in very material improvement. In fact, during the past fiscal year, it is apparent that the coroners of the State have understood their duties under the present registration law much better than ever before, and there has been no instance of obstinate violation on the part of these county officials. There promises to be no difficulty in the future in securing thoroughgoing compliance of the law on the part of coroners, but it promises to be a much more difficult matter to fully instruct the 12,000 physicians of the State so that they will not encroach upon the province of the coroner. This difficulty is made the greater through the fact that there has been no recent authentic list of legally qualified physicians of Illinois available for reference. It appears highly desirable, regardless of the expense entailed, that the State Department of Health should be supplied with correct and addressographed lists of all coroners, local registrars and licensed physicians, so that a campaign of education in regard to requirements may be carried on during the coming year.

#### UNSATISFACTORY LOCAL REGISTRARS .

The experiences of the past few years, supplemented with a careful study of a great mass of registration correspondence, leads to the conclusion that the township clerks of Illinois are frequently unqualified, educationally or otherwise, for the office of registrar of vital statistics. In addition to this, it has been ascertained that in a great many sections of the State, and particularly those sections having a large agricultural population, there is a distinct objection to the election of a resident of a city or village as township clerk, this office usually being given to residents of rural communities. Under these conditions, it becomes exceedingly difficult for physicians to present certificates of birth and for undertakers to present certificates of death with applications for burial permits. For this reason, there is a tendency on the part of physicians and undertakers to present their certificates to the most convenient registrar, regardless of geographical limitations of his jurisdiction, or to fail to present their certificates at all. As pointed out in previous reports of this division, it appears to be absolutely necessary that township clerks or other persons serving as local registrars shall be located in cities, towns or villages.

Another reason for the unsatisfactory character of local registrars is that the township clerks are elected for a period of only two years and

that with some 1,400 such officials in the State there are about 700 new clerks elected each year. These men come into office without the slightest knowledge of the requirements of registration, leading to constant errors and confusion. During the first half of 1920, there were 447 entirely inexperienced township clerks who had to be instructed in the more or less technical details of registration work.

This condition can only be overcome by the amendment of the vital statistics law, eliminating township clerks as registrars and providing for convenient places of registration in cities and villages, preferably of local registrars, regardless of their township office and more directly responsible to the State Department of Health.

A law enacted in the state of California provides that the local health official may act as registrar and that the state health department shall appoint a registrar for each rural primary district, whose term of office shall be four years and who will be removed forthwith for failure or neglect to perform his duties as prescribed by the statutes.

#### DIRECTORY OF LOCAL REGISTRARS

The edition of the directory and book of practical instruction, of local registrars, issued by the State Department of Health in 1918, designed for the use of physicians, local registrars and undertakers, is practically exhausted and should be reprinted. This book, with its instruction to local registrars, was unquestionably of material aid, but should be entirely rewritten to show the new registration district boundaries resulting from the combinations recently made, which have reduced the number of districts from 2,500 to approximately 1,500. The pages of instruction should also be revised to contain information found to be necessary in the experiences of the past two years. This directory and book of instructions should be placed in the hands of each of the 7,000 physicians outside of Chicago, and in the hands of all local registrars and all undertakers residing outside the city of Chicago.

Combinations of registration districts referred to above, based upon investigations made by field agents, have continued during the past fiscal year and will be continued in the future. In November, 1919, there were 1,557 registration districts as compared with 1,498 on June 30, 1920. These districts include 2,683 primary districts.

#### FIELD INVESTIGATIONS

One field agent allowed to the Division of Vital Statistics at the beginning of the fiscal year and an inspector designated by the Division of Social Hygiene for part-time employment, have been able to cover greater territories than in times past, and have carried out the following essential work: (a) surveys of State, county and private hospitals and institutions, for the purpose of obtaining more complete mortuary and birth data; (b) investigations relative to the combinations of the registration districts; (c) settlement of cases of dispute in cases of payment

of fees; (d) investigations of violations of the State law; (e) investigations of registrars persistently delinquent; (f) conferences with undertakers, physicians and local registrars, in case letters of inquiry produce no results.

From July 1, 1919, to the end of the fiscal year, these two representatives of the department have covered the registration districts in the following counties: Dr. F. C. Blandin—Adams, Boone, Carroll, Cass, Champaign, Cook, DeWitt, Ford, Fulton, Grundy, Hancock, Henry, Iroquois, Kankakee, Kendall, LaSalle, Lee, Livingston, Logan, Macon, Marshall, Mason, McDonough, McLean, Menard, Ogle, Peoria, Piatt, Putnam, Rock Island, Tazewell, Vermilion, Warren, Whiteside, Will, Winnebago and Woodford; Dr. H. T. Burnap—Bond, Calhoun, Christian, Clark, Clinton, Coles, Cook, Crawford, Cumberland, Douglas, Edgar, Effingham, Fayette, Greene, Jasper, Jefferson, Jersey, Macoupin, Madison, Marion, Moultrie, Pope, Sangamon, Shelby, St. Clair, Washington and Williamson.

As the result of these personal visits to interested communities and the forms of report exacted by field agents, the division now has on file very complete data relative to each county, giving valuable information as to the local condition prevailing. This compilation of reports conveys to the office force of the division an understanding of local difficulties and of the qualifications of registrars of the utmost value, preserving the information gleaned by individual field agents for the permanent use of the department.

#### INDEXING AND TABULATION

All death certificates from sections outside the city of Chicago for the year 1919 were indexed before the punching of the statistical cards, and the 1920 death certificates from the same area are now being similarly indexed. The mortality data for the fiscal year ending June 30, 1920, are shown in Table XIII.

On account of the great number of incomplete certificates received and the necessity for the employment of several typists in securing lacking data, birth and stillbirth certificates have not been indexed nor will this be practicable until additional filing space is provided, inasmuch as the present card files of the division are now taxed to capacity. Reports of births by counties are shown in Table XIV.

Late in June, 1919, the equipment for entire mechanical tabulation with punching machines, sorting machines and tabulators, was completed. With its increased number of employees, the division has been able during the past year to carry out complete mechanical tabulation according to the plan originally outlined. The deaths for the State, outside of Chicago, for the year 1919, have now been completely tabulated by county, month, color, and for all diseases in accordance with the Detailed International List of Causes of Death, and tabulation has



also been made of these details for all important cities and towns in the State. As a result, the division now has available for immediate reference, for the year 1919, the following information relative to each death certificate: registration district number, county, city and class of city, sex, color or race, conjugal condition, age at death, occupation, birthplace of deceased and of father and mother, date of death, cause of death, duration of illness and whether or not deceased was a resident or non-resident of the State, county or place where death occurred.

#### STATISTICAL REPORTS

During the fiscal year the division has been called upon repeatedly for various statistical reports, among which the following were of special interest:

Mortality record of Illinois, showing estimated population as of January 1, 1919, total deaths (exclusive of stillbirths) from all causes, and death rates per 1,000 of population, together with deaths from diseases of major sanitary importance by counties, and by important cities and towns.

United States Public Health Service, Annual Mortality Summary for Illinois, for year 1919.

Table of Comparison, Illinois Annual Mortality Summaries, for the years 1917, 1918 and 1919.

Base sheets of comparative statistics of the births and deaths occurring in Illinois during the years of 1917, 1918 and 1919, including rates for the State, city of Chicago, and Illinois, exclusive of Chicago, with deaths from diseases of major sanitary importance by counties and for the city of Chicago.

Reports to the Department of Education and Registration of deaths of physicians in the State, as shown by death certificates received, or from correspondence, also reports of persons acting as midwives, where certificates have shown their status to be questionable.

Deaths of children under five years of age, by counties, and by age groups, January to June inclusive, 1919, with total deaths from all causes and estimated population as of July 1, 1919.

Deaths from certain accidents, first six months of 1919.

Statistics of births and deaths in Illinois, for the years 1917, 1918 and 1919.

Deaths resulting from the puerperal state, January to June inclusive, 1919.

Total deaths, all causes, and death rates by months for Illinois, year of 1919.

Deaths of infants under five years of age, in Coles County, and Mattoon city, years of 1917, 1918, 1919 and first five months of 1920.

Deaths of infants under one year of age, and deaths of infants under two years of age, by months and by causes, in the city of Springfield and in Sangamon County, years of 1917 and 1919.

Deaths by months and by causes, and deaths of infants under five years of age by months, by causes and by age groups, Will County, for the year 1918.

Deaths of infants under one year of age, and deaths of infants under two years of age, by months and by causes, with total deaths (exclusive of stillbirths) from all causes in the city of East St. Louis, fiscal year 1917-1918.

Deaths from typhoid fever and death rates per 100,000 of population for Coles County, and Mattoon city, years of 1917, 1918, 1919 and first five months of 1920.

TABLE XIII—MORTALITY RECORD OF ILLINOIS, DEATHS, (EXCLUSIVE OF STILL-IMPORTANCE, BY COUNTIES, AND PRINCIPAL CITIES

NOTE.—Numbers in parenthesis at heads of columns refer to titles in the Manual of the

Counties with important cities and towns.	Population mid-year 1919-1920.	(1-189) Deaths—all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.					
				(1) Typhoid Fever.	(4) Malaria.	(5) Smallpox.	(6) Measles.	(7) Scarlet Fever.	(8) Whooping Cough.
The State.....	56,485,098	81,159	12.5	386	107	8	429	324	444
Adams County.....	562,188	912	14.7	5	2			6	7
Quincy.....	635,978	518	14.4	3	2			3	3
Alexander County.....	626,059	453	17.4	8	11		8		
Cairo.....	515,203	334	22.0	4	3		3		
Bond County.....	618,049	152	8.4	2	3		1		
Boone County.....	515,322	179	11.7	1					
Brown County.....	110,397	110	10.6					1	2
Bureau County.....	647,516	417	8.8					1	2
Calhoun County.....	18,610	84	9.8	2			1	1	11
Carroll County.....	118,035	183	10.1						1
Cass County.....	517,896	182	11.2	4			3		
Champaign County.....	655,965	624	11.1	3	1		1	5	7
Urbana.....	510,230	159	15.5						2
Champaign.....	515,873	217	13.7	2				2	1
Christian County.....	235,309	332	10.8	2	1		3		4
Clark County.....	123,517	253	10.8	4			2	1	
Clay County.....	118,661	212	11.4						6
Clinton County.....	522,947	210	9.2	1			2	1	3
Coles County.....	535,108	454	12.9	10			4		1
Mattoon.....	513,449	181	13.5	8			2		
Cook County.....	53,053,017	39,465	12.9	38	9	1	129	194	209
Chicago.....	52,701,212	35,445	13.1	32	7	1	111	180	191
Chicago Heights.....	519,653	229	11.7	1			7	2	1
Cicero.....	544,995	347	7.7						1
Evanston.....	537,215	477	12.8					6	2
Maywood.....	512,072	106	8.8						
Oak Park.....	539,830	509	12.8		1			4	2
Blue Island.....	510,628	194	18.4	1					
Elgin.....	(3)								
Crawford County.....	522,771	252	11.1	1	1		3		1
Cumberland County.....	114,281	134	9.4				1		2
DeKalb County.....	635,125	357	10.2	1	1		1		
DeKalb.....	610,258	100	9.7						
DeWitt County.....	519,352	203	10.5				1		1
Douglas County.....	620,074	216	10.8	3				3	1
DuPage County.....	542,120	350	8.3	1			1	2	
Edgar County.....	127,336	295	10.8	5		1		2	1
Edwards County.....	110,049	125	12.4	1	3		4	1	
Effingham County.....	120,055	260	13.0	2	1		2	1	3
Fayette County.....	628,083	322	11.5	9			8	1	1
Ford County.....	117,096	204	11.9	1				2	7
Franklin County.....	632,100	631	19.7	16	4	1	41		8
Fulton County.....	652,841	635	12.0	3			1		5
Canton.....	510,928	182	16.7						2
Gallatin County.....	114,628	137	9.4	4	4				
Greene County.....	522,883	273	11.9	3	1	1		1	1
Grundy County.....	518,580	189	10.2	1			1		
Hamilton County.....	118,227	152	8.3	4					3
Hancock County.....	528,523	291	10.2	2					7
Hardin County.....	67,015	61	8.7	3	4		2		
Henderson County.....	19,724	78	8.0						1
Henry County.....	643,396	609	14.0	11			2	1	2
Kewanee.....	516,028	266	16.6	9					
Iroquois County.....	534,841	293	8.4	2			1	2	2
Jackson County.....	537,091	493	13.3	12	6		7		2
Jasper County.....	118,157	152	8.4	3	1			2	
Jefferson County.....	630,073	376	12.5	6	1		2	1	
Mt. Vernon.....	59,815	157	16.0	4	1			1	
Jersey County.....	512,682	111	8.8	3					
Jo Daviess County.....	521,917	246	11.2				1		2
Johnson County.....	512,022	106	8.8	5	3		1		1

BIRTHS) FROM ALL CAUSES, AND FROM DISEASES OF MAJOR SANITARY AND TOWNS, JULY 1, 1919 TO JUNE 30, 1920 INCLUSIVE.

"International List of Causes of Deaths," Second Revision—Paris, 1909. (Detailed List.)

## Diseases of major sanitary importance.

(9)	(10)	(23)	(28-29)	(30-35)	(90)	(61C)	(63D)	(91-92)	(100)	(37)	(38)
Diphtheria.	Influenza.	Rabies (In man) Hydrophobia.	Pulmonary Tuberculosis.	Tuberculosis other forms.	Chronic Bronchitis.	Cerebro- Spinal Fever.	Acute Anterior Polio-myelitis.	Pneumonia— All forms.	Septic Sore Throat.	Syphilis.	Gonococcus Infection.
1,061	5,661	3	5,956	785	407	95	101	8,118	178	463	58
8	59		55	6	4	1	2	69	3	4	1
4	27		31	6	2		1	47		1	1
3	24		69	8				37		9	6
3	19		55	6				22		9	4
2	25		13	1	3	1		6			
	20		8	1	2		1	18			
	22		11				1	12			
2	25		28	3	3		4	34	2	1	
3	5		7		2			6			
	5		6	2	2			13	1	1	
1	22		8	1				11		2	1
4	51		28	8		2	1	38	1	2	1
2	7		11	1				11	1		
1	15		11	3				15		1	2
1	36		19	5	2		1	38			
3	18		22	1	2		1	27	2	2	
	24		20	2			1	13			
4	12		12	2	4	2		19		3	
2	18		19	2	4			35	2	3	
1	6		10	2	2	1		18	3	2	
668	2,307	1	3,223	423	199	50	21	4,457	35	244	18
605	2,080	1	2,527	372	186	42	13	3,998	20	224	18
9	16		7	2	2		1	23			
22	24		25	4	1		2	39	3	1	
3	25		21	35	3	4	1	44	4	2	
1			6					3			
3	18		17	4	2			65	2		
2	17		7	3			1	16	3	2	
	22		14	2				21			
2	13		5			3		15		2	1
3	25		19	7	1		2	22	2		
1	10		5	2				7		2	2
1	14		12	1			1	18	2	1	
1	18		10	1				22	2		1
2	22		17	6	2	1	1	29		1	
2	11		21	4	3	1	1	11	1		
3	14		15	1			1	4			
4	17		18	5	2		2	24		2	
3	30		21	1	1		3	30	4		
2	24		11		1			15		1	
10	81		43	5	1	4	1	60	1	2	1
2	74		23	2	4		2	48	1	3	
	28		6	1				9			
9	9		11	5	1			13	1		
1	23		20		1		1	19		1	
2	18		7	1				17	1		
3	22		18	6				19			
2	27		15	3	2		1	19			
3	1		8	1				4			1
1	11		3		1			4	1		
1	74		22	2	5			70	4	2	
	43		9	2				40	1	2	
4	29		13	2	1			17	2		
12	67		33	3	3		2	30	2	5	
2	24		12		1			10	1		
6	42		35	5	1		1	43		2	
	15		17	3	1		1	16		2	
	11		6					7			
	17		11		2			23		1	
2	10		6		2			7	1		

TABLE XIII

Counties with important cities and towns.	Population mid-year 1919-1920.	(1-189)	Deaths—all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.					
					(1) Typhoid Fever.	(4) Malaria.	(5) Smallpox.	(6) Measles.	(7) Scarlet Fever.	(8) Whooping Cough.
Kane County	599,499	1,363	13.7	3				1	1	1
Aurora	536,265	602	16.6	1				1		
Elgin	527,431	463	16.9	2						
Kankakee County	44,940	738	16.4	5				3	1	1
Kankakee	516,721	204	12.2	1				1	1	
Kendall County	110,777	108	10.0						1	
Knox County	48,663	623	12.8	5		1		1		4
Galesburg	523,834	377	15.8	4				1		1
Lake County	574,285	895	12.0	19				8	4	1
Waukegan	622,697	249	11.0	10				6		1
LaSalle County	592,925	1,138	12.2	4		1		3	5	2
LaSalle	513,050	189	14.5	2				2		
Ottawa	510,816	154	14.2							
Streator	514,779	251	17.0	1					4	
Lawrence County	628,694	200	7.0	9				4		7
Lee County	527,750	331	11.9			1		2	2	3
Livingston County	140,465	415	10.3	1				1	1	4
Logan County	631,718	401	12.6	2				7	3	1
Lincoln	511,882	243	20.5	1				6	2	1
Macon County	565,175	811	12.4	3		1		9	3	6
Decatur	543,818	636	14.5	3		1		7	2	4
Macoupin County	557,274	477	8.3			1			1	9
Madison County	5106,895	1,269	11.9	9		5		9	5	4
Alton	524,714	567	14.8	2		2		5	1	2
Granite City	514,757	160	10.8	1		1		2	1	
Marion County	537,497	447	11.9	4		1		4		3
Centralia	512,491	166	13.3	2				1		
Marshall County	514,760	157	10.6	1						1
Mason County	516,634	178	10.7	4		1				2
Massac County	615,267	206	13.5	6		2	1	4	2	3
McDonough County	126,887	374	13.9	1						2
McHenry County	533,164	386	11.6					3	4	3
McLean County	668,165	912	13.4	13						2
Bloomington	528,638	465	16.2	7						3
Menard County	511,694	150	12.8							1
Mercer County	518,800	185	9.8							2
Monroe County	512,839	113	8.8	1				4		
Montgomery County	541,403	538	13.0	1				3	1	1
Morgan County	533,567	766	22.8	4						1
Jacksonville	515,713	580	36.9	3						
Moultrie County	114,630	157	10.7					2		
Ogle County	127,864	280	10.0					1	2	1
Peoria County	6111,704	1,772	15.9	5		3		6	14	4
Peoria	576,121	1,146	15.1	4		2		6	10	
Perry County	524,303	302	12.4	2		3		8	1	1
Piatt County	515,714	155	9.9	1				2	2	1
Pike County	526,866	302	11.2	2					8	1
Pope County	111,215	50	4.5							
Pulaski County	514,629	219	15.0			5		2		1
Putnam County	610,325	65	6.3							
Randolph County	529,109	322	11.1	6		1		6		1
Richland County	115,970	202	12.6			1			1	1
Rock Island County	685,301	1,132	13.3	7			1	5	2	11
Moline	530,709	398	13.0	4			1	1		3
Rock Island	535,177	400	11.4	2				3	2	7
Saline County	538,353	439	11.4	10		2		6		8
Sangamon County	6110,121	1,381	12.5	7		1		8	4	2
Springfield	559,183	979	16.5	6				1	2	
Schuyler County	513,285	151	11.4	2						1
Scott County	59,489	85	9.0							
Shelby County	529,601	297	10.0	1				1	3	2
Stark County	110,098	84	8.3							
St. Clair County	6151,490	1,529	10.1	7		4		23	4	5
Bellefonte	524,741	346	14.0	2		2		6		
East St. Louis	566,740	814	12.2	5		2		17	3	3



—Continued.

## Diseases of major sanitary importance.

(9)	(10)	(23)	(28-29)	(30-35)	(90)	(61C)	(63D)	(91-92)	(100)	(37)	(38)
Diphtheria.	Influenza.	Rabies (In man) Hydrophobia.	Pulmonary Tuberculosis.	Tuberculosis other forms.	Chronic Bronchitis.	Cerebro- Spinal Fever.	Acute Anterior Polomyelitis.	Pneumonia— All forms.	Septic Sore Throat.	Syphilis.	Gonococcus Infection.
8	63		87	11	11	3	1	135	7	6	2
3	39		36	4	6	2	1	73	4		
1	9		31	3	4			42	2	5	2
7	18		86	4	4		1	59	5		1
2	10		11	3	1			15	1		1
	12		4	1		1		8			
3	38		38	5	3	1	1	76	7	3	1
2	21		13	5	3		1	54	4	1	1
5	118		54	14	1	1	2	89	3	7	
	17		14	1				26	1	1	
	116		74	7	3			82	2	4	
	18		12	2				19		3	
	11		10	1				12			
4	44		7	1	2			12	1	1	
2	18		13	5	2	1		13			
2	28		11	2	4	1	1	21	1		
4	36		9	6	1		2	38	1		
6	78		65	6	1		1	31		2	
5	45		55	5	1		1	25		2	
8	71		54	3	3	1		47	2	6	2
6	54		44	3	2	1		38	2	6	2
7	34		23	6	1		3	45	2	1	
27	79		97	14	5	2	1	127	2	2	1
2	22		24	5	2			40			
3	11		11	2	1			10	1		1
8	28		38	5	3	1	2	45	1	3	
1	7		16	2		1	1	8	1		
1	13		5		1		1	12	1		
1	17		9	2	1		1	10		2	
4	4		18	1	2			19		2	
	24		11	1				24	5	6	
4	25		16	7	3			41	2		
6	79	1	39	12	2	1	1	62	2	5	3
2	36		16	2	1	1	1	42		2	1
3	13		11	1				12	1	1	
	23		11	1	1		2	14	1		
	4		8					11			
4	60		27	3	2		1	36		3	1
2	49		46	6	1			91	1	3	1
1	22		37	6				68		3	1
1	15		12	1	1			13	1		
	24		17	1				30		1	
20	103		159	10	5	2	3	150	5	20	3
16	68		53	5	3	2	2	104	1	20	3
2	32		17	3	3			12			
	12		13	1	1			13			
3	25		31	2		2		20	2	1	
1	3		4				1	1		1	
3	20		33	1				18	1	3	1
3	6		3	1			1	7		1	
	23		27	4	2			37	4	1	
2	18		16	2				12	1		
6	49		67	11	6	3	3	115	3	9	1
5	17		15	3	2	3	2	43	2	4	
1	20		33	3	3			29		1	
12	65		34	5	1		2	27	1	4	
18	76		105	9	11	1	3	138	5	16	1
9	47		37	6	8	1	3	109	3	13	1
5	12		11	1			1	6	1		
	5		3					7			
	34		16	1	5			31		1	
	11		3					3			
19	69		94	11	10	2	3	128	1	11	2
11	21		23	4	3			21		1	
8	48		46	7	7	1	1	84	1	9	2

TABLE XIII

Counties with important cities and towns.	Population mid-year 1919-1920.	(1-189) Deaths—all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.					
				(1) Typhoid Fever.	(4) Malaria.	(5) Smallpox.	(6) Measles.	(7) Scarlet Fever.	(8) Whooping Cough.
Stephenson County.....	639,773	555	14.0	1	-----	-----	-----	6	3
Freeport.....	519,669	389	19.8	1	-----	-----	-----	6	-----
Tazewell County.....	634,814	433	12.4	2	-----	2	-----	1	8
Pekin.....	612,913	139	10.8	-----	1	-----	-----	-----	5
Union County.....	121,856	396	18.1	7	4	-----	1	-----	-----
Vermilion County.....	586,162	1,280	14.9	5	1	-----	21	4	8
Danville.....	533,750	563	16.7	2	1	-----	6	1	4
Wabash County.....	617,201	180	10.5	4	3	-----	5	2	-----
Warren County.....	623,456	292	12.4	1	-----	1	-----	-----	-----
Monmouth.....	58,116	164	20.2	1	-----	1	-----	-----	-----
Washington County.....	118,759	150	8.0	3	1	1	1	-----	1
Wayne County.....	125,697	205	8.0	3	1	-----	-----	-----	1
White County.....	123,052	261	11.3	5	1	-----	1	-----	1
Whiteside County.....	536,174	438	12.1	-----	-----	-----	6	1	1
Will County.....	592,875	1,107	12.0	13	-----	-----	4	2	1
Joliet.....	538,372	481	12.5	5	-----	-----	3	2	1
Williamson County.....	662,105	765	12.3	14	6	-----	18	2	7
Winnebago.....	560,929	989	10.9	1	-----	-----	2	3	4
Rockford.....	565,651	776	11.8	-----	-----	-----	2	3	4
Woodford County.....	120,506	180	8.8	-----	-----	-----	-----	-----	-----
County total.....	(4)	81,159	-----	386	107	8	429	324	444

<sup>1</sup> Population April 15, 1910: Decrease between 1900 and 1910; no estimate as of January 1, 1920 made. No announcement of Bureau of Census enumerated population, January 1, 1920 received.

<sup>2</sup> Based on population as estimated by the Bureau of the Census as of July 1, 1917; decrease between estimate of 1916 and 1917; no estimate as of January 1, 1920 made. No announcement of Bureau of Census enumerated population, January 1, 1920 received.

<sup>3</sup> Major portion of Elgin City lies within Kane County. See Elgin City, Kane County, for Death Rate covering entire City.

<sup>4</sup> See Bureau of Census announced enumerated population, January 1, 1920 for State (subject to correction), page 1.

<sup>5</sup> Bureau of Census announced enumerated population, January 1, 1920—subject to revision.

<sup>6</sup> Estimated population as of January 1, 1920; no announcement of Bureau of Census enumerated population January 1, 1920 received.

—Concluded.

## Diseases of major sanitary importance.

(9)	(10)	(23)	(28-29)	(30-35)	(90)	(61C)	(63D)	(91-92)	(100)	(37)	(38)
Diphtheria.	Influenza.	Rabies (In man) Hydrophobia.	Pulmonary Tuberculosis.	Tuberculosis other forms.	Chronic Bronchitis.	Cerebro- Spinal Fever.	Acute Anterior Polomyelitis.	Pneumonia— All forms.	Septic Sore Throat.	Syphilis.	Gonococcus Infection.
4	54	-----	18	9	1	-----	-----	36	4	6	-----
4	43	-----	11	7	-----	-----	-----	22	2	6	-----
1	31	-----	25	3	4	1	3	104	-----	5	-----
1	6	-----	8	1	2	-----	2	17	-----	2	-----
4	22	-----	40	3	1	1	1	33	1	2	-----
1	67	-----	67	11	10	-----	-----	90	4	12	5
1	56	-----	28	7	7	-----	-----	48	3	5	5
1	10	-----	12	1	3	-----	-----	7	1	-----	-----
-----	27	-----	16	3	3	-----	-----	28	4	2	-----
-----	12	-----	11	2	2	-----	-----	18	1	1	-----
1	7	-----	5	1	2	-----	-----	14	-----	-----	-----
2	26	-----	16	4	2	-----	-----	23	3	-----	-----
4	30	-----	25	3	2	-----	1	26	-----	-----	-----
1	45	-----	18	5	4	1	4	38	1	2	-----
13	60	-----	69	12	5	1	-----	112	4	7	-----
4	23	-----	18	4	1	-----	-----	47	2	3	-----
16	103	1	53	6	2	1	2	68	4	3	-----
11	96	-----	65	7	6	-----	1	118	5	4	2
9	75	-----	56	6	5	-----	1	96	4	4	2
-----	10	-----	6	2	2	-----	-----	11	4	1	-----
1,061	5,661	3	5,956	785	407	95	101	8,078	178	463	58

TABLE XIV—REPORTED BIRTHS IN ILLINOIS, BY COUNTIES AND PRINCIPAL CITIES AND TOWNS, JULY 1, 1919 TO JUNE 30, 1920, INCLUSIVE.

Counties with important cities and towns.	Total July 1, 1919 to June 30, 1920 inclusive.	Counties with important cities and towns.	Total July 1, 1919 to June 30, 1920 inclusive.
The State.....	114,678	Lawrence County.....	345
Adams County.....	1,027	Lee County.....	377
<i>Quincy</i> .....	633	Livingston County.....	815
Alexander County.....	372	Logan County.....	492
<i>Cairo</i> .....	206	<i>Lincoln</i> .....	200
Bond County.....	293	Macon County.....	1,431
Boone County.....	212	<i>Decatur</i> .....	1,039
Brown County.....	150	Macoupin County.....	1,152
Bureau County.....	783	Madison County.....	2,327
Calhoun County.....	187	<i>Alton</i> .....	541
Carroll County.....	230	<i>Granite City</i> .....	297
Cass County.....	343	Marion County.....	635
Champaign County.....	1,171	<i>Centralia</i> .....	285
<i>Champaign</i> .....	287	Marshall County.....	234
<i>Urbana</i> .....	181	Mason County.....	316
Christian County.....	680	Massac County.....	231
Clark County.....	366	McDonough County.....	460
Clay County.....	372	McHenry County.....	452
Clinton County.....	555	McLean County.....	1,235
Coles County.....	739	<i>Bloomington</i> .....	423
<i>Mattoon</i> .....	280	Menard County.....	241
Cook County.....	53,927	Mercer County.....	335
<i>Chicago</i> .....	47,976	Monroe County.....	202
<i>Chicago Heights</i> .....	458	Montgomery County.....	753
<i>Cicero</i> .....	669	Morgan County.....	593
<i>Evanston</i> .....	956	<i>Jacksonville</i> .....	262
<i>Maywood</i> .....	160	Moultrie County.....	322
<i>Oak Park</i> .....	1,060	Ogle County.....	429
<i>Blue Island</i> .....	232	Peoria County.....	1,457
Crawford County.....	393	<i>Peoria</i> .....	1,044
Cumberland County.....	278	Perry County.....	477
DeKalb County.....	507	Piatt County.....	285
<i>DeKalb</i> .....	109	Pike County.....	473
DeWitt County.....	383	Pope County.....	56
Douglas County.....	462	Pulaski County.....	229
DuPage County.....	506	Putnam County.....	155
Edgar County.....	456	Randolph County.....	535
Edwards County.....	141	Richland County.....	261
Effingham County.....	351	Rock Island County.....	1,730
Fayette County.....	472	<i>Moline</i> .....	821
Ford County.....	338	<i>Rock Island</i> .....	495
Franklin County.....	692	Saline County.....	647
Fulton County.....	358	Sangamon County.....	1,829
<i>Canton</i> .....	203	<i>Springfield</i> .....	1,094
Gallatin County.....	267	Schuyler County.....	274
Greene County.....	434	Scott County.....	96
Grundy County.....	287	Shelby County.....	570
Hamilton County.....	222	Stark County.....	174
Hancock County.....	444	St. Clair County.....	2,603
Hardin County.....	152	<i>Belleville</i> .....	508
Henderson County.....	140	<i>East St. Louis</i> .....	1,364
Henry County.....	815	Stephenson County.....	732
<i>Kewanee</i> .....	356	<i>Freeport</i> .....	461
Iroquois County.....	671	Tazewell County.....	668
Jackson County.....	755	<i>Pekin</i> .....	211
Jasper County.....	323	Union County.....	374
Jefferson County.....	473	Vermilion County.....	1,617
<i>Mt. Vernon</i> .....	189	<i>Danville</i> .....	740
Jersey County.....	253	Wabash County.....	259
JoDaviess County.....	344	Warren County.....	377
Johnson County.....	137	<i>Monmouth</i> .....	216
Kane County.....	1,694	Washington County.....	310
<i>Aurora</i> .....	842	Wayne County.....	309
<i>Elgin</i> .....	421	White County.....	356
Kankakee County.....	691	Whiteside County.....	659
<i>Kankakee</i> .....	248	Will County.....	1,622
Kendall County.....	151	<i>Joliet</i> .....	564
Knox County.....	742	Williamson County.....	1,177
<i>Galesburg</i> .....	436	Winneshago County.....	1,506
Lake County.....	1,156	<i>Rockford</i> .....	1,261
<i>Waukegan</i> .....	380	Woodford County.....	417
LaSalle County.....	1,672		
<i>LaSalle</i> .....	349	Total all counties.....	114,678
<i>Ottawa</i> .....	207		
<i>Streator</i> .....	315		

\* No births reported for this period for the two wards of Elgin City in Cook County



## FISCAL YEAR BIRTH SUMMARY.

Year.	Population January 1.	Total births.	Birth rate per 1,000 population.
1918-1919.....	6,359,102	106,457	16.7
1919-1920.....	6,485,098	114,678	17.7

Births actually reported, year of 1919, with estimated "normal" for reports, and delinquencies estimated for all counties of Illinois, based on population as of July 1, 1919.

Typhoid fever death rates for Illinois, years of 1905-1919, inclusive.

Deaths from pulmonary tuberculosis among the bituminous coal miners of Illinois, years of 1916, 1917 and 1918.

In addition to these special reports, the division has been called upon for rate tables and comparisons in order to satisfy the constantly increased number of requests from editors, newspaper correspondents, trade papers, collegiate instructors and other teachers, public health nurses and other interested persons.

As a result of its final success in getting the records of 1916 into proper form, the division is able to present herewith (see Table XV) for the first time comparative statistics of births and deaths for the State of Illinois for the years 1916, 1917, 1918 and 1919, the four years which have passed since the present vital statistics law became effective.

## COOPERATION OF OUTSIDE ORGANIZATION

As has been the custom in previous years, the division has assisted various local and civic organizations in improving birth and death registration in their localities, and has supplied data on infant mortality to public health nurses, child welfare associations and others interested in the betterment of conditions of early life.

The files of the division have also been made available for the use of several officers of the United States Public Health Service, who, in the course of their surveys of industrial conditions in various parts of the State, found it necessary to check their records with the death certificates on file from these points.

## MISSIONARY WORK

While much good has been accomplished in securing more complete registration of births and deaths by the activities of extra-governmental medical and social organizations, such activities have usually been sporadic in character, and consequently it has been found that the department must rely upon its own resources in carrying out a continuous campaign of education and stimulation.

During the past fiscal year, the Director of the State Department of Health has placed at the disposal of the Division of Vital Statistics the part-time services of the several district health officers of the department to be devoted to the checking up of local registrars and particularly those disposed to be negligent or tardy in the performance of their duties.

TABLE XV—STATISTICS OF BIRTHS AND DEATHS FOR THE STATE OF ILLINOIS—THE YEARS OF 1916, 1917, 1918 AND 1919 COMPARED.

	1916			1917			1918			1919		
	State total.	Chicago.	State exclusive of Chicago.	State total.	Chicago.	State exclusive of Chicago.	State total.	Chicago.	State exclusive of Chicago.	State total.	Chicago.	State exclusive of Chicago.
Population estimated—July 1.....	6,152,257	2,497,722	3,654,535	6,234,995	2,547,201	3,687,794	6,317,733	2,596,681	3,721,052	6,442,790	2,675,926	3,766,864
Births.....	114,298	47,769	66,529	108,896	49,556	59,340	117,055	49,707	67,348	108,004	44,051	64,043
Birth rate per 1,000 of population.....	18.6	19.1	18.2	17.4	19.4	16.0	18.5	19.1	18.1	16.8	16.5	17.0
Deaths—total from all causes.....	81,345	36,304	45,041	86,231	38,055	48,176	103,138	44,605	58,533	77,384	33,494	43,890
Death rate per 1,000 of population.....	13.2	14.5	12.3	13.8	14.9	13.0	16.3	17.1	15.7	12.0	12.5	11.7

The division placed in the hands of the district health officers lists of the delinquent local registrars located in their several districts, with the result that delayed reports were cleared up more effectively than ever before.

It is believed that a continuation of the plan of including in the duties of the district health officers a general supervision over local registrars in their districts, will have a tremendous effect upon birth and death registration in Illinois, without imposing any special burden upon the district health officers.

In addition to the very voluminous correspondence through which the division has endeavored to instruct local registrars and to advise physicians, coroners and undertakers as to the requirement of the law, the assistant registrar of vital statistics and other representatives of the division have made addresses at meetings of undertakers and coroners, held at different points in the State, while a district health officer assigned to the division has presented a paper on "vital statistics" before the Illinois Academy of Science at its annual meeting at Danville, and addressed chautauqua meetings at Mt. Zion and Avon on the importance of complete birth registration.

The staff of the division has encouraged the visits of local registrars, district health officers, physicians and other persons at the offices at Springfield, and have endeavored to make these visits a source of instruction and a means of closer cooperation.

#### COMPENSATION OF LOCAL REGISTRARS

The Illinois law provides that local registrars shall receive from the county clerk, on statement issued by the State Department of Health, fees for the registration of births and deaths at the rate of 25 cents for each certificate of birth, stillbirth or death, when the total number for the year is less than 5,000.

While the fee is small, the registrars regard it as very important, since they are required for this compensation to make twelve monthly reports to the State Department of Health and twelve monthly reports to the county clerk annually and to submit each annual report to the Department of Health and to the county clerk at their own expense, besides being required to make a complete monthly record of all certificates for their own offices.

The experiences of the past four years under the present law have shown that in order to have complete and proper registration and regular reports from each of the 1,500 districts, the registrars must be made to understand that the Department of Health is concerned in having fees paid promptly at the close of each calendar year. To this end, an earnest effort is being made to have all record of fees for the year 1920 ready at the earliest possible moment, so that as far as possible, the fees may be paid on January 10, 1921. No appropriation was made by the County

Board of Commissioners of Cook County for the payment of fees due the more than 80 registrars residing in that county, until 1919, and at that time there were fees due to these registrars for the years 1916 to 1918 inclusive, while the only appropriation made was understood to be applicable in payment for birth reports only.

Because of vexatious delays on the part of the Cook County board, the registrars of births and deaths in the city of Chicago and outside in the county, were seriously handicapped.

As a result of persistent appeals made through the office of the Attorney General, it is understood that there will now be no delay in the payment of fees to the registrars of Cook County and it is likely that the registration service will be better in the future.

#### BIRTH REGISTRATION

Engraved certificates of registration of births which have been furnished by the division to the parents of all children whose births have been properly registered, have proved of great aid in proving the accuracy of birth records as well as increasing the number of these records. The registration of births in Illinois, however, is not yet satisfactory. Approximately 15 per cent of the certificates received by the department are incomplete. This means that approximately 16,000 incomplete reports are received each year requiring 70 letters to be written on each of the 280 working days of the year. This clerical service, the magnitude of which was not appreciated in providing for the personnel of the past fiscal year, will require the full time of at least two additional typists for the fiscal year beginning July 1, 1920.

#### RECOMMENDATIONS

The experiences of the past fiscal year have indicated conclusively the acute need of additional equipment, particularly certificate files, correspondence files, card files, maps and dictionaries. Without the addition of these files the proper and orderly development of the division's records will be practically impossible. The division also needs suitable calculating machines for the preparation of statistical data.

It is suggested that section 4 of the present registration law should be amended to eliminate all township clerks as registrars, whether by providing for compulsory combination of all townships with important cities or villages in all townships, and constituting the county or village clerk as registrar or by eliminating all town clerks of all cities and villages and providing for the appointment of local registrars of each district by the Department of Public Health.

It is also suggested that section 18 of the registration law be amended so as to eliminate as part of the duty of the local registrars the requirement to send copies of birth and death records to county clerks and to have the law provide that such copy shall be made and forwarded to the county clerks by the Division of Vital Statistics.



Inasmuch as it has been found that many of the original certificates forwarded by local registrars are faulty and deficient in character, and require extensive correction in the Division of Vital Statistics, the records in the hands of the county clerks can never be satisfactory so long as they are made up largely of these faulty certificates, but could be made complete and satisfactory if the county clerks had in their possession copies of certificates corrected by the Division of Vital Statistics.

## DIVISION OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

DR. C. W. EAST, *Chief*

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The Division of Child Hygiene and Public Health Nursing of the State Department of Public Health divides its activities into two principal divisions, the first of which is devoted to the development of activities for the conservation of child life and the second, to the establishment and general supervision of public nursing service throughout the State of Illinois.

The first organized child welfare work of the State Department of Public Health was begun a number of years ago in the establishment of clinics for the reeducation of crippled children following a very general prevalence of anterior poliomyelitis throughout the nation. This prevalence of infantile paralysis caused a searching investigation to be made to locate children crippled by this disease when the true nature of the illness had not been recognized. The results were such as to justify the establishment of a definite clinical service which has been maintained and expanded since that time and which has remained one of the important functions of the Division of Child Hygiene and Public Health Nursing in the State Department of Public Health as created under the Civil Administrative Code. This work for crippled children has progressed so satisfactorily during the past fiscal year that the demand for service has exceeded the ability of the division to meet all needs. This work will be dealt with in another section of this report.

### COOPERATIVE WORK

The division has responded repeatedly to requests from other divisions for assistance and this is especially true of the nursing staff. During December, 1919, and January, 1920, in addition to their own work, the nurses assisted in a comprehensive survey of the city of Alton conducted by the Division of Surveys and Rural Hygiene. They also assisted the Division of Tuberculosis in an intensive survey and clinical work at the same place which featured the last week of the survey.

### STATE SURVEY OF PUBLIC HEALTH NURSING SERVICE

During the year, steps were taken to coordinate the nursing services which have been established under the auspices of the Illinois Tuberculosis Association, the American Red Cross, and other agencies under the general leadership of the State Department of Public Health. This

cooperative work required a careful study of the existing nursing agencies. A survey of nursing service was consequently undertaken in November, 1919, and the register of nursing service has been kept corrected up to the time that these pages are written. The extent of nursing service from November 1, 1919, to June 30, 1920, is shown in the accompanying table. (See Table XVI.)

TABLE XVI—REPORT OF PUBLIC HEALTH NURSING, NOVEMBER 1, 1919-JUNE 30, 1920

1. Public health nursing in Illinois. (Cook County not included.)	
Number of counties with some form of public health nursing.....	60
Number of counties having rural public health nursing.....	49
Total number of organizations employing public health nurses.....	141
Tuberculosis .....	40
American Red Cross.....	29
General services .....	16
Boards of education.....	40
Industries .....	9
Child welfare .....	7
(26 organizations are doing some form of child welfare work in addition to other work.)	
2. Public health nurses in Illinois. (Cook County not included.)	
Total number of public health nurses.....	199
Tuberculosis .....	44
American Red Cross.....	38
General .....	49
School .....	51
Industrial .....	10
Child welfare .....	7
3. Visits.	
Number of counties in State visited.....	36
Number of cities in State visited.....	49
Number of visits to child welfare stations.....	12
Number of visits to orthopedic stations.....	5
Number of visits to tuberculosis stations.....	7
Number of visits to psychopathic stations.....	1
Number of visits to dental stations.....	2
Number of visits to eye clinic stations.....	6
Total number of visits.....	70
4. Addresses.	
Talks given to nurses.....	28
Talks given to other groups.....	17
Total number .....	45
5. Attendance at association meetings.	
National .....	5
State and local.....	6
Total number of days in attendance.....	36
6. Number of days away from Springfield.....	131
7. Detail information on file in office.	

ETTA LEE GOUDY, R. N. (Mo.)

State Supervisor, Public Health Nursing.

The nurses of the staff have also visited various local nursing services for purposes of observation and to afford advice and encouragement to local workers. In almost all instances these visits were especially invited. There is no doubt as to the value of this kind of supervision on the part of the State Department of Public Health.

The establishment of new services has usually been attended by the help of this division and in many cases, the preparatory work for such establishment has been initiated by us. This part of our work will continue as an important function under the cooperative working agreement which, by consent of all participating agencies, places the general supervision of public nursing service in the hands of the State.

## COOPERATIVE NURSING AGREEMENT

In the nation-wide effort to secure coordination in public service nursing through the cooperation of State governmental agencies and the larger National agencies engaged in nursing service, Illinois has taken an important part. The only two agencies of national character which have taken a very important part in the establishment of nursing service, have been the American Red Cross and the National Tuberculosis Association, and the preliminary nation-wide agreements essential to satisfactory cooperation are consequently entered into between the National Organization of State Health Authorities, the National Tuberculosis Association, and the central offices of the American Red Cross. In the preliminary conferences and in the preparation of this national agreement, the State health authorities were represented by the director of the Illinois State Department of Public Health as executive officer of the National Conference of State Health Authorities; while the National Tuberculosis Association was represented by the assistant director of the Illinois State Department of Public Health serving as a committee of one to represent the executive committee of that organization.

As these pages are written, there has been prepared a memorandum of agreement applicable to the State of Illinois, entered into by the director of the State Department of Public Health, the president of the Illinois Tuberculosis Association, and the manager of the Central Division of the American Red Cross. The various provisions of this agreement have already been declared satisfactory to all parties concerned and there is every likelihood that it will become effective substantially as written. This agreement will impose upon the nursing department of the Division of Child Hygiene and Public Health Nursing important new functions which will contribute materially to the betterment of every phase of public health work throughout the State of Illinois. The Illinois Nursing Agreement is as follows:

I. The following memorandum contemplates the acceptance of the general principles of certain agreements entered into between the Conference of State and Provincial Health Authorities, the American Red Cross, the National Tuberculosis Association, and the National Organization for Public Health Nurses, to-wit:

A memorandum of policy of cooperation between the State health authorities and the National Tuberculosis Association as amended December 1, 1919; a suggestion of principles for the cooperation of the Red Cross with the State Department of Health and other agencies in the field of public health nursing with amendments approved by the executive committee of the Conference of State and Provincial Health Authorities, July 29 and October 25, 1919; an agreement between the American Red Cross, the National Tuberculosis Association, and the National Organization of Public Health Nursing for the promotion of public health nursing and a suggested plan for cooperation between the Red Cross, the state tuberculosis associations in states in which there is no Bureau of Public Health Nursing and no state supervising nurse within the state department of health.



II. The State Department of Public Health will employ a supervising nurse who shall, at all times, be impartial and unprejudiced in her relationship with the American Red Cross, the Illinois Tuberculosis Association and all other participating agencies.

III. There shall also be attached to the State Department of Public Health an assistant supervisor of nursing service for the American Red Cross and an assistant supervisor of nursing service for tuberculosis. The assistant supervising nurse for the Red Cross may be compensated in whole or in part by the American Red Cross and the assistant supervisor of tuberculosis nursing may be compensated in whole or in part by the Illinois Tuberculosis Association. In the selection of these assistant supervising nurses, the interested agencies will have a voice so far as may be consistent with the civil service laws of the State of Illinois. When the salary of the assistant supervising nurse is wholly paid by either extra-governmental agency, the interested agency may select the assistant supervising nurse with the approval of the State Department of Public Health. In any event, the assistant supervising nurses will act under the supervision and direction of the State Department of Public Health and these assistant supervising nurses, together with the State supervising nurse, will constitute a supervisory body of public health nursing in the State.

IV. The State Director of Public Health, together with duly authorized representatives of the American Red Cross and the Illinois Tuberculosis Association and officials of other extra-governmental cooperating agencies, will constitute a standing committee to confer on questions affecting the relationship of the State Department of Health to extra-governmental nursing services and the relationship of the extra-governmental services to each other. Questions of policy will be determined by the standing committee, which will serve as a committee of review of the supervisory body of nurses. It is understood that neither the State supervising nurse, nor assistant supervising nurses shall represent their organizations on this standing committee.

V. The supervising nurse acting for and under the direction of the Director of Public Health, shall have general supervision over all public health nursing of the State, whether publicly or privately maintained. It will be the policy of the State Department of Public Health in the promulgation of rules, programs, policies or procedures, to take no action tending to affect or disturb nursing service supported in whole or in part by extra-governmental agencies without conference with such extra-governmental agencies through their duly designated representatives.

VI. The American Red Cross and the Illinois Tuberculosis Association will recommend to public health nurses employed in whole or in part with funds furnished by them or to nurses otherwise affiliated with them a whole-hearted acceptance and concurrence in the supervision of the State Department of Public Health, although nothing in this paragraph shall be construed to interfere with concurrent supervision or contact by the Red Cross or the Illinois Tuberculosis Association through their supervising nurses or otherwise with their several nursing services.

VII. Before submitting nursing plans or programs for any community in which nurses are now employed by the American Red Cross or with tuberculosis funds or in affiliation with the Illinois Tuberculosis Association or in which it is contemplated that funds derived from extra-governmental services will be used in whole or in part in carrying out such plans or programs, the State Department of Public Health will confer with the Illinois Tuberculosis Association and the American Red Cross, such conferences to be held prior to the submission of such plans to the local communities or local agencies. Neither the Illinois Tuberculosis Association nor the American Red Cross will institute or establish nursing activities in any community without submission of the plans or programs to the representatives of the other agencies parties to this memorandum.

VIII. The American Red Cross and the Illinois Tuberculosis Association will recommend as a general policy to their affiliated societies, or for plans in the expenditure of funds, that general public health nurses be employed rather than nurses engaged in specialized fields. But nothing in this paragraph shall interfere with the employment of special nurses in communities where the importance of special work appears to the standing committee to justify the employment of such special nursing service. As a general proposition, it is accepted that special tuberculosis nurses may be properly employed wherever there is established, or in the opinion of the standing committee should be established, a permanent tuberculosis dispensary; that special child welfare nurses shall be employed where there are established or, in the opinion of the standing committee, should be established permanent welfare stations or clinics or other specialized nursing service as may be required.

IX. It is specifically understood that where general public health nurses are employed by funds from more than one agency, the nursing service shall be designated and known as a community nursing service rather than the nursing service of any one of the several participating agencies.

X. The organizations concerned in this understanding accept the following qualifications for nurses engaged in public health nursing service: four months in an approved course in public health nursing service, or eight months in a general public health nursing organization. It is further understood in face of the great demand for public health nursing service, that said organizations may take temporary appointments of nurses who have spent two or more months with a general public health nursing organization that is prepared to take on nurses and give them systematic instruction and supervision. When such appointment is made it should be definitely understood by both the nurse and the community that the appointment is a temporary one, and that it will necessitate close supervision on the part of the State organization with which the service is affiliated and that the nurse will be relieved at a later period to take up further preparation. It is definitely understood that nothing in this paragraph shall affect the appointment of nurses already engaged in nursing service by the participating agencies or by affiliated agencies.

XI. In the establishment of any nursing service by a participating agency an earnest effort will be made to secure the cooperation of local health authorities before any permanent plans or programs are adopted.

XII. The State Department of Public Health will prepare and distribute forms or reports of nursing service which will be distributed through the American Red Cross and the Illinois Tuberculosis Association to their affiliated nursing services with the understanding that duplicate reports will be submitted at reasonable intervals, both to the State Department of Public Health and to the organization with which the nursing service is affiliated. The State Department of Public Health in the preparation of these report blanks will take into consideration the needs and desires of the several affiliated agencies.

XIII. It is understood that any one of the participating agencies may withdraw its approval of this memorandum and may withdraw its participation in this cooperative plan after thirty days' notice of such withdrawal has been made to the participating agencies by a duly authorized representative.

XIV. It is definitely understood that in the carrying out of the provisions of this memorandum the Director of the State Department of Public Health must act in conformity with the Civil Administrative Code and the laws of the State of Illinois, and that he cannot delegate in any way the duties, obligations or authority imposed upon him by the statutes.

## LITERATURE

During the year the division has prepared a "Diet List for Infants and Children" which has been in constant demand. In fact, the first large edition is already exhausted and a new edition, entirely revised and rewritten, is now in process of preparation.

The division is also engaged in the preparation of a new edition of the circular "Better Babies" to take the place of the first edition of that very useful publication which is now entirely exhausted.

## CONFERENCES

The division took an active part in the Better Babies Conference held by the department in connection with the Illinois State Fair. The conference during the past fiscal year was the best and largest that had ever been held until that time; but it is anticipated that the conference at the State Fair of 1920 will exceed all efforts in the past.

In these conferences hundreds of children are weighed, measured, examined and scored and the scores are interpreted and advice is given on the basis of the score to the parents of each child.

This State conference has furnished the inspiration for many similar conferences throughout the State. The division has assisted in conferences at Libertyville, Joliet, Aledo, Paxton, Pinckneyville, and Coulterville.

All members of the division staff have repeatedly responded to invitations to speak at public gatherings throughout the State, appearing before conventions, clubs and civic bodies.

As a result of these conferences, the division has been instrumental in establishing or supporting infant and child welfare stations at East St. Louis, Alton, Moline, Princeton, Streator, Galesburg, Joliet and Champaign. In some instances a medical officer of the division has conducted the weekly clinics until permanently established in local medical hands.

## CLINICAL WORK

The reconstruction work for crippled children, initiated a number of years ago, has grown with remarkable strides and now requires fully one-half the time of the staff of the division.

Regular clinics, at definite intervals are held at Springfield, Freeport, Rockford, Waukegan, Elgin, Aurora, Cicero, Blue Island, Joliet, Kankakee, Ottawa, Streator, Princeton, Rock Island, Moline, Galesburg, Quincy, Monticello, Champaign, Danville, Alton, East St. Louis, and Mattoon. Clinics are also held irregularly at Jacksonville and Bloomington.

As shown in the accompanying table (Table XVII), 166 clinics have been held during the year with a total number of 1,498 patients. The total number of visits made by these patients to the clinics was 3,026. Shoes, braces and appliances were fitted and supplied in 919

cases and special muscle training was given in 585 cases. Of the total number of patients 557 were victims of infantile paralysis for whom these clinics were originally instituted.

TABLE XVII.

	Number of clinics.	Number cases visiting clinics.	Number visits to clinics.	Shoes, braces, casts and appliances.	Received special muscle training.	Number of infantile paralysis cases.	Cases referred to family physician.	Number Wasserman tests advised.	Number receiving hospital or institutional care.	Operations advised.	X-Rays.	Number malnutrition cases.
Alton.....	5	51	119	30	19	11	4	5	1	6	5	10
Aurora.....	6	42	96	34	26	25	6	4	3	2	4	3
Blue Island.....	6	40	68	25	17	16	5	4	3	5	5	5
Champaign.....	6	58	76	26	17	11	8	2	2	4	12	9
East St. Louis.....	5	52	81	20	17	13	11	10	5	9	9	4
Freeport.....	9	155	282	86	55	60	22	6	1	14	14	26
Jacksonville.....	3	33	49	22	10	8	4	3	2	3	5	6
Joliet.....	5	78	129	38	22	20	13	7	7	8	15	12
Kankakee.....	7	58	151	30	24	26	6	5	5	6	6	2
Moline.....	5	43	83	30	15	16	4	-----	3	3	3	4
Monticello.....	5	54	94	40	26	23	3	-----	7	1	4	7
Oak Park.....	6	30	51	23	16	23	2	2	3	2	5	-----
Cicero.....	6	30	75	21	13	18	2	1	2	2	3	5
Ottawa.....		53	108	35	24	24	9	-----	5	6	5	14
Streator.....	6	110	114	42	23	18	9	4	4	5	7	11
Quincy.....	6	64	101	42	25	23	10	4	5	7	5	4
Rockford.....	5	15	32	9	11	6	1	-----	1	-----	-----	1
Rock Island.....	45	247	801	187	92	92	14	8	28	10	46	27
Springfield.....	5	42	110	31	30	26	3	2	5	1	3	3
Waukegan.....	4	33	41	18	15	14	4	1	2	4	5	2
Elgin.....	3	56	76	30	19	18	14	5	4	6	6	7
Galesburg.....	5	50	82	37	19	27	4	2	3	6	2	8
Princeton.....	1	14	14	8	8	4	-----	-----	-----	2	3	-----
Bloomington.....	7	90	193	55	42	35	15	2	7	9	12	10
Danville.....												
Total.....	166	1,498	3,026	919	585	557	173	78	108	121	184	180



## DIVISION OF SURVEYS AND RURAL HYGIENE

BAXTER K. RICHARDSON, *Acting Chief*

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The great wave of development that has marked the trend of public health administration in Illinois during the fiscal year ending June 30, 1920, has greatly limited the scope of work done by the Division of Surveys and Rural Hygiene. Instead of covering the broad field of service indicated by its title, the division has been surcharged with responsibilities relating wholly to sanitary surveys. Cities all over the State have awakened to the great public service rendered by an efficient and adequate health department; they have realized that a great economic saving can be effected in this way. Along with this awakening on the part of local authorities has come to them also the perplexing fact that public health administration offers problems manifold and complex. As local authorities have come to realize that experienced men alone can determine the exact character of their particular public health problems and offer practical solutions therefor, they have turned to this division for assistance. Services of this character in the moderate sized community have taken up practically all of the time of the Division of Surveys and Rural Hygiene during the past year.

### EDUCATIONAL ACTIVITIES

A follow-up educational campaign is a new feature added to the program of a general health and sanitary survey of this division. The features of these campaigns are a series of newspaper articles and a series of conferences. The newspaper articles are carefully prepared stories based upon, and growing out of, the survey findings. The conferences are attended by representatives of the State and local governments and of extra-governmental agencies that are or should be interested in public health work. In these conferences are discussed the health problems of the community, as well as the ways and means of their solution. The general educational influence and the practical public health administrative results that have grown out of these campaigns are so immediate and far reaching that the educational follow-up work is now considered an integral part of every survey, and regarded as a definite function of this division.

In spite of the fact that requests for surveys have been greatly in excess of the capacity of the division, its policy has remained thoroughness rather than expansiveness of service. The time required for making

a complete and exhaustive study varies, according to the size of the community, from three to four months. A resume that shows where surveys have been carried out during the year follows:

#### ALTON SURVEY

At the request of the Board of Trade, which represented a number of local organizations, the survey of Alton, Madison County, was undertaken and carried out. Through a house-to-house canvass the exact sanitary conditions that prevailed in the city were determined, and much valuable information bearing upon the health history of the community was collected.

The discovery of a score of unreported cases of scarlet fever represents one leading feature of this survey. This discovery of a potential epidemic that threatened the city and its subsequent suppression served as an important, practical demonstration of the value of efficient public health administration.

That the Madison County Medical Society financed the survey is worthy of note. During that part of the survey which dealt with the physical examination of school children local physicians also gave unsparingly of their time. Active and whole hearted cooperation of this character on the part of practicing physicians is especially encouraging to public health officials.

Immediately following the general health and sanitary survey, the State Department of Health cooperated with the Illinois Tuberculosis Association in an intensive tuberculosis survey of Alton. This division was placed in charge of the field work of this survey and was also responsible for a large part of the publicity campaign incident thereto.

Following the survey this division carried out for the first time an educational campaign as described above.

#### MOLINE SURVEY

The survey of Moline, Rock Island County, was carried out upon the same general lines as that in Alton, and was undertaken in response to a joint request from the city and the Moline Community Council.

Especial interest in the study of Moline arises from the peculiar situations that surround the city. It is a community purely industrial, characterized by rapid growth and a strong foreign element, with few negroes. With its 30,709 people, Moline forms the hub from which radiates the great industrial community made up of Davenport, Rock Island, East Moline and Silvis. All these join hands in supplying the labor required in the great manufacturing plants of Moline that send out farm implements, wagons, tractors and engines to all parts of the world.

Unlike the other members of this great industrial community, Moline presents a life-long history of endemic typhoid fever incidence that has been intensified from time to time by general outbreaks, severe

in nature. This peculiar fact encouraged anxiety on the part of local officials and operated as a leading factor in the request for assistance from the State.

The survey showed that the typhoid fever history of Moline is closely related to a large number of privy vaults and the users of a large number of shallow wells found in the city. Upon the basis of data collected, this division was able to offer practical suggestions and recommendations for solving not only the typhoid problem but also for the establishment of an efficient local health department.

#### QUINCY SURVEY

As these pages are written the division is closing an inquiry into the sanitary and health conditions that prevail in Quincy, Adams County. Unusual interest attaches to this survey for a number of reasons. On the one hand the city has been without a comprehensive public health administration; in spite of its manifold and varied industries it has shown no material gain in population during the last ten census years; its white population comes largely from English and German extraction in about equal numbers while the negro population is considerable. On the other hand the city has been organized into a public health district under a State law that provides for raising adequate funds and for establishing the necessary machinery for executing public health administration; the Chamber of Commerce and clubs such as the Rotary, Kiwanis and Lions are now united with a singleness of purpose to create a large and wholesome community atmosphere charged with health and progress.

Under these circumstances, the survey findings may easily be reduced to a practical foundation for the larger public health administration that will be installed at the opening of the next fiscal year. Quincy has the enviable advantage of being financially prepared to follow out in the fullest possible way the suggestions and recommendations that will result from the study.

The survey in Quincy was undertaken at the request of the organizations that created the public health district. Its purpose was to find out the problems, submit practical solutions, and prepare the field for the successful inauguration of the new administration.

#### • GENERAL ACTIVITIES

In addition to the three exhaustive studies described above this division carried out a general inquiry into the public health activities of all communities in Illinois with more than 5,000 inhabitants, Chicago excepted. This survey showed what the several local public health needs are; it described the efficiency of local administration and the expenditures therefor; it indicated the general local attitude toward public health administration and suggested the nature of local problems. The information collected gives a splendid idea of the earning power of a dollar in public health service.

The division prepared and displayed an unusually attractive exhibit at the State Fair. Through graphic and pictorial illustrations the services and functions of the division were shown in a manner that was easily and readily understood by the average visitor. A large number of visitors from rural districts and the distribution of literature were the principal benefits resulting from the exhibition.

The Division of Surveys and Rural Hygiene has constantly cooperated with the other divisions of the Department of Public Health. It has discovered violators of the law that interest especially the Divisions of Communicable Disease and Vital Statistics; it has collected much information of great value to the Divisions of Tuberculosis and Child Hygiene.

#### PROPOSED FUTURE DEVELOPMENT

A growing demand for standardizing special branches of public health administration suggests the expansion of this division along that line. During recent months numerous agencies have sought information bearing upon an approximately definite per capita expenditure necessary for efficiently carrying on special activities such as infant welfare, tuberculosis, visiting nursing and kindred programs.

Because of its limited personnel the division has not been able to carry out a comprehensive rural program. The active and extensive need for such a program suggests the creation of a sub-division to meet the demand.

The large number of communities that are taking advantage of the present type of exhaustive studies carried on by this division, suggests an increase in personnel in order that these surveys may be made with more dispatch. An increase in personnel is also necessary if modified surveys of special subjects are undertaken.

Recommendations for future developments of this division are, therefore, three-fold. First, the services now rendered should be more expansive. Secondly, a sub-division should be created to meet the rural problem. Thirdly, modified surveys should be undertaken. Along with all of these activities the educational work done by the division can be greatly increased.

#### PROPOSED LEGISLATION

A law providing for the establishment of public health districts, and the appointment in them of full time health officers, would greatly increase the effective functioning of this division.



## **DIVISION OF DIAGNOSTIC, BIOLOGICAL AND RESEARCH LABORATORIES**

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The year ending June 30, 1920, has been an important one in the history of the Division of Laboratories of the State Department of Health. The laboratory personnel was seriously depleted by the call of military service, but has now been restored to normal and the scope of work undertaken during the past year has not only equaled the pre-war status but has gone far beyond.

There has been somewhat of a handicap to the work of the division on account of the fact that at various times four different persons have acted in the capacity of chief. Martin DuPray, the former chief, left the service in August, 1919; Miss Caroline Steele entered the work for a short time after which Miss Eva Faught acted in that capacity. The present chief of the division assumed his duties in January, 1920. Despite this continuous disruption in the working forces, the standard of work has been maintained and the volume continually increased.

It has been the purpose of the department to separate entirely the Division of Diagnostic Laboratories from the Division of Biological and Research Laboratories, and this will be possible within the next few months when the Division of Biological and Research Laboratories will take possession of the laboratory buildings located north of Springfield and previously maintained by the State Department of Agriculture for the production of hog cholera serum. The Division of Diagnostic Laboratories will remain in the State House, and both laboratories will at that time be provided with adequate room for the carrying out of their extensive programs. During the past year, however, the two divisions have remained in the same quarters and under the same direction.

The Fifty-first General Assembly made certain increases in appropriations rendering it possible to increase the laboratory personnel. The Biological and Research Laboratories had assigned to them the chief of the division, an assistant bacteriologist, a laboratory helper, a stenographer and a shipping clerk. The Division of Diagnostic Laboratories had assigned to it a chief bacteriologist, an assistant bacteriologist, a laboratory helper and a stenographer.

A constant effort has been made to obtain a chief bacteriologist for the Division of Diagnostic Laboratories who would be able to relieve the chief of the division of the responsibility of routine diagnostic work so

that he may spend the time in the preparation of biological products. The salary provided for this position has not been sufficient to attract the proper kind of person and it is recommended that a provision for increased salary be made by the next General Assembly.

## DIVISION OF DIAGNOSTIC LABORATORIES

THOMAS G. HULL, PH. D., *Chief*

During the past year there has not only been a material increase in the volume performed but in the scope of the work undertaken. The Diagnostic Laboratories now perform the following service:

### *Serology:*

1. Complement fixation test in syphilis, (Wassermann test).
2. Complement fixation test in gonorrhea.
3. Complement fixation test in tuberculosis.
4. Agglutination test in typhoid fever:
  - (a) Microscopic (Widal test).
  - (b) Macroscopic.
5. Pneumococcus typing.

### *Bacteriology:*

1. Sputum for tubercle bacilli.
2. Pus smears for gonococci.
3. Smears for Vincent's angina.
4. Swabs for diphtheria bacillus.
5. Feces for typhoid bacillus.
6. Feces for dysentery bacillus.
7. Urine for typhoid bacillus.
8. Blood for culture.
9. Pus for culture, (autogenous vaccine).
10. Sputum for culture.
11. Spinal fluid for culture.
12. Miscellaneous materials for culture, as milk, food and exudates.

### *Pathology:*

1. Dogs' heads for rabies.
2. Blood smears for differential count.
3. Urine for routine analysis.
4. Spinal fluid for cell count and globulin test.
5. Feces examination for:
  - (a) Blood.
  - (b) Gall stones.
  - (c) Bile.

### *Histology:*

1. Tissue for section and microscopical examination. (Facilities are not available for this work as routine matter at the present time, but preparations are being made so that it can be done in the near future.)

### *Chemistry:*

1. Milk for fat test (Babcock test).
2. Urine for chemical analysis.
3. Spinal fluid for Lange's colloidal gold test.
4. Gastric contents for acidity.

*Parasitology:*

1. Blood smears for malaria parasites.
2. Feces for parasites:
  - (a) Hookworm.
  - (b) Tapeworm.
3. Smears for *treponema pallidum*.

*Entomology* (as related to public health only):

1. Lice.
2. Fleas.
3. Ticks.
4. Mosquitoes.
5. Flies.

During the past year the laboratory personnel has been constantly watchful for means by which it can increase the value of its service to the physicians of the State. To this end there has been considerable research and the study and checking-up of procedures carried out by other laboratories.

The volume of work performed during the twelve months was two and one-half times greater than that carried out during the previous year. The largest increase in service was in the Wassermann test for syphilis, showing an increase from 2,672 to 13,139. Examinations of swabs for the Klebs Löffler bacilli (diphtheria), came next with a total increase of about four thousand swabs examined. The examination of pus for the detection of gonococcus infection has increased threefold, while the examinations of sputum for the presence of the tubercle bacillus have developed in number.

The examinations made at the Central Diagnostic Laboratories at Springfield during the twelve months of the past fiscal year, are shown in Table XVIII.

TABLE XVIII—WORK OF THE DIVISION OF DIAGNOSTIC LABORATORIES FOR THE YEAR JULY 1, 1919-JUNE 30, 1920.

	Diphtheria.	Typhoid-Widal tests.	Paratyphoid A.	Paratyphoid B.	Malaria.	Gonococci.	Tubercle bacilli.	Meningococci.	Wassermann tests.	Complement fixation tests tuberculosis.	Complement fixation tests gonorrhea.	Miscellaneous.	Total.
July.....	47	195	201	198	10	92	409	-----	782	-----	-----	16	1,950
August.....	107	171	170	168	18	69	438	-----	594	-----	-----	16	1,751
September.....	688	159	154	143	7	69	402	-----	749	-----	-----	6	2,377
October.....	452	135	135	135	3	112	444	-----	1,204	-----	-----	16	2,636
November.....	2,485	136	127	138	10	144	486	35	1,696	-----	-----	10	4,267
December.....	600	86	86	86	3	133	484	201	1,226	-----	-----	4	2,909
January.....	200	101	101	101	2	156	594	-----	1,163	-----	-----	8	2,426
February.....	226	100	96	117	2	134	489	-----	1,090	-----	-----	6	2,260
March.....	103	144	144	144	3	140	599	-----	1,364	-----	2	63	2,706
April.....	154	85	85	85	3	141	619	-----	1,333	4	21	58	2,588
May.....	146	86	86	86	6	129	612	-----	1,332	21	38	61	2,603
June.....	68	131	131	131	6	149	620	-----	1,606	42	54	83	3,021
Total.....	15,276	1,529	1,516	1,532	73	1,468	6,196	236	13,139	67	115	347	31,494

As indicated in Table XVIII, during the past fiscal year 31,494 specimens were examined as compared with 12,003 for the fiscal year 1918-1919; 10,500 for fiscal year 1917-1918 and 6,015 for fiscal year 1916-1917.

In addition to the central laboratories at Springfield, the State Department of Health maintains five branch laboratories especially designed for the examination of specimens where time is an important factor in determining the diagnosis. These laboratories have been located in the following places: East State Laboratory, Urbana; North State Laboratory, 7 West Madison Street, Chicago; North West State Laboratory, East Moline; South State Laboratory, Mt. Vernon and West State Laboratory, Galesburg.

During the early part of the year these laboratories examined swabs for the Klebs Löffler bacilli, meningococci and made Widal tests for typhoid. Through a lack of sufficient funds all work, especially the examinations for diphtheria bacilli, had to be discontinued. The work of these branch laboratories is indicated in Table XIX:

TABLE XIX—WORK OF THE BRANCH STATE LABORATORIES.

	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
East State Laboratories—													
Diphtheria.....	20	13	137	89	107	88	97	100	83	73	32	7	851
Widals—typhoid.....	8	11	18	25									62
Meningococci.....		1											1
North State Laboratory—													
Diphtheria.....	65	31	44	366	169	124	70	19	28	51	48	32	1,047
Widals—typhoid.....	11	13	19	15					1				59
Meningococci.....	3												3
South State Laboratory—													
Diphtheria.....	1	4	11	192	222	193	101	41	74	48	14	6	907
Widals—typhoid.....													
Meningococci.....					1								1
North-West State Laboratory—													
Diphtheria.....	2	4	21	50		33	38	20	20	32	18	5	243
Widals—typhoid.....	10	23	10	33									76
Meningococci.....													
West State Laboratory—													
Diphtheria.....					87	16	16	8	11	15		10	163
Widals—typhoid.....													
Meningococci.....													
Total.....	120	100	260	770	585	454	322	188	217	224	112	60	3,412

The work of the laboratories of the State Department of Health, is rendered without charge. The value of this service, measured not in the prevention of illness and the saving of human life, but rather in the ordinary charges for laboratory service, is much greater than has been generally believed. The following table (Table XX) indicates the amount of money saved to the physicians and the people of the State of Illinois by the free service rendered by the central laboratories and the



branch laboratories during the past fiscal year, amounting to something over \$113,000:

TABLE XX.

	Central laboratory.	Branch laboratories.	Total.
July.....	\$ 5,706	\$ 360	\$ 6,066
August.....	4,828	300	5,128
September.....	7,260	798	8,058
October.....	8,949	2,250	11,199
November.....	12,758	1,764	14,522
December.....	9,043	1,362	10,405
January.....	8,248	957	9,205
February.....	7,696	744	8,440
March.....	9,324	651	9,975
April.....	9,207	672	9,879
May.....	9,237	336	9,573
June.....	11,004	180	11,184
Total.....	\$103,260	\$10,374	\$113,634

## SHIPPING SERVICE

The preparation, shipment and distribution of mailing containers to physicians, agents and clinics, has become more and more of a problem. Each finished container sent out represents from 10 to 20 cents of State money. Among the thousands of containers distributed, some go astray, some are broken, some unused and some are employed to send specimens to other laboratories, in violation of the State laws forbidding their use for private purposes.

The Division of Diagnostic Laboratories has recently arranged a method of check-up on containers so that it may be ascertained in what locality the loss, if any, takes place. The division at the present time furnishes the following double mailing containers, complying with postal regulations: Wassermann outfits, containing sterile tube and bleeding needle; diphtheria outfits, containing sterile tube and cotton swab; sputum outfits, containing vial with 5 per cent carbolic acid; and fecal outfits, with vial containing sterile glycerin and with sterile swab. Single mailing tubes are distributed containing micro slides for the submission of pus and blood smears. Envelopes containing parchment paper are used for the collection of blood for Widal tests.

The following table (Table XXI) shows the record of mailing case containers as compared with the previous year, and it will be noted that practically four times as many containers were distributed during the past year:

TABLE XXI—DISTRIBUTION OF LABORATORY CONTAINERS.

	Sputum.	Wasser- mann.	Widal.	Micro- slides.	Diph- theria.	Others.	Total.
July.....	456	808	256	168	151	6	1,875
August.....	527	781	248	128	387	31	2,102
September.....	717	1,213	244	185	1,606	2	3,967
October.....	651	1,523	223	277	2,081	4	4,759
November.....	761	1,371	213	188	1,522	18	4,073
December.....	723	1,529	402	224	1,184	43	3,805
January.....	771	1,716	84	286	414	18	3,289
February.....	530	1,499	177	202	72	16	2,496
March.....	695	1,505	245	418	157	68	3,088
April.....	869	1,432	72	175	511	151	3,210
May.....	1,052	1,555	144	490	290	40	3,571
June.....	899	1,855	119	279	129	42	3,321
Total.....	8,651	16,787	2,157	3,018	8,504	439	39,556
Total for 1918-1919...	3,566	3,294	1,424	728	1,950	47	11,009

## MOBILE LABORATORY

The mobile laboratory operated by the Division of Diagnostic Laboratories has been of considerable service during the past year in checking up diphtheria and meningitis outbreaks. The laboratory consists of a chest which can be shipped as baggage on the same train with the attendant, arriving at the destination at the same time. The contents of the chest varies according to the nature of the work in hand, but it contains under ordinary circumstances, microscope, incubator, burners, stains, slides, culture media and swabs. Close contact is kept with the central laboratory at all times that the mobile laboratory is in operation, in order that culture media or other supplies may be furnished in sufficient quantities.

During the past year the mobile laboratory has been called upon to meet emergencies at Anna, Rockford, Lewistown, Meekin, Salem and Elgin.

## EDUCATIONAL WORK

It has been the policy of the division to encourage the members of the staff in advancing themselves through study and observation in the more advanced technique of laboratory procedure, so that all employees shall have a general working knowledge of every phase of laboratory diagnostic purposes and methods.

To this end, numerous divisional conferences have been held in which bacteriologic progress has been reviewed and special emphasis placed upon this progress in its relationship to public health problems. The benefits from these conferences have been demonstrated without question and as a result it has been found that the younger members of the laboratory staff have been able, in times of emergency, to assume advanced duties.

From time to time various members of the medical and nursing professions of the State have visited the laboratories for the purpose of

acquainting themselves with newer methods of laboratory technique, or to review their previous training. It has been the policy of the division to encourage such visits, and to give every possible facility to these visitors.

The United States Public Health Service, in the establishment of a school for diagnosis of tuberculosis in Springfield, has made laboratory procedure a part of the regular course, and instruction in this branch has been given regularly in the laboratories of the department.

The division has prepared a special exhibit, which was shown at the Illinois State Fair, demonstrating the relationship between bacteria and disease, the prevalence of bacteria in every day life and the means by which bacteria may be destroyed. The exhibit has caused considerable favorable comment, and requests for its use have been received from numerous schools and health centers.

#### BIOLOGICAL AND RESEARCH WORK

The Biological and Research Laboratories, to be under the direction of a separate division of the State Department of Health, were created by the last General Assembly. The duties of this division are to produce the biological products for free distribution necessary to the prevention and suppression of communicable disease and to develop more advanced laboratory procedures in the production of such products.

Owing to the cramped condition of quarters on the top floor of the State House, it proved impossible to establish two separate divisions and it also proved impossible to produce biological products on a large scale. Further, the increased demands upon the diagnostic laboratory, amounting to almost three times the demand of any previous year, has made it necessary to utilize all laboratory technicians in the diagnostic division.

It is now understood that the Division of Biological and Research Laboratories will be provided with special quarters, taking over the plant located north of the city of Springfield, originally created by the State Department of Agriculture for the production of hog cholera serum.

These laboratories are well adapted to the needs of the division, and it is expected that the State will be able to produce in these new quarters products which are now costing the public large amounts of money. In view of the greatly increased demands upon the Division of Diagnostic Laboratories, however, it will be necessary to materially augment the present laboratory staff if both of the laboratory divisions are to be adequately manned.

#### INTERDEPARTMENTAL COOPERATION

The Division of Diagnostic Laboratories is constantly in touch with several of the other divisions of the department. Copies of reports on all specimens which are positive, indicating the existence of communicable diseases, are sent to the chief of the Division of Communicable

Diseases and to the district health officer within whose jurisdiction the patient resides. Copies of all positive reports in cases of venereal diseases are likewise sent to the chief of the Division of Social Hygiene. Through the Division of Tuberculosis constant touch is maintained with many of the tuberculosis clinics in the State, and these are kept supplied with mailing containers for the transmission of sputum. The Division of Sanitary Engineering, through its engineering laboratory, is in very close touch with the Division of Diagnostic Laboratories at all times.

#### FUTURE DEVELOPMENTS

The Division of Diagnostic Laboratories and the Division of Biological and Research Laboratories stand at the very threshold of their possible usefulness to the physicians and the people of the State. The foundation has been intelligently and firmly laid and upon it a structure of unlimited proportions may be built with unquestioned efficiency and economy.

During the coming year it is hoped that certain very essential objects may be attained which will make for the material betterment of the service. First among these is the establishment of the Biological and Research Laboratories in new and modern quarters, making it possible to produce vaccine virus for the immunization of smallpox; typhoid vaccine, pneumococcus vaccine, and diphtheria antitoxin for use in connection with the Schick test to determine immunity to diphtheria.

The quarters now assigned to the diagnostic laboratories are altogether inadequate to meet the growing needs of the State while the location of the diagnostic laboratories within the new quarters of the Biological and Research Laboratories would prove so inconvenient as to be entirely impracticable.

More room must be obtained in the State House or in the central portion of Springfield for bacteriological and serological procedures and for the establishment of routine examination of pathological specimens for which there is a large and growing demand.

The branch laboratories can be made of much more value than at present, and can relieve the pressure upon the Central Diagnostic Laboratories by the appropriation of sufficient funds to permit extension of service to include the examination of specimens from suspected cases of typhoid fever, pneumonia and meningitis, in addition to the diphtheria work which is now carried out.

It is desirable that the work in the branch laboratories be done on a salary rather than a piece work basis, and it is also desirable that there shall be established more branch laboratories, especially in the extreme southern and the extreme northern sections of the State.



## DIVISION OF LODGING HOUSE INSPECTION

WILLIAM W. McCULLOCH, *Superintendent*

The Division of Lodging House Inspection of the State Department of Health is charged with the supervision of certain sanitary features of lodging houses, boarding houses, taverns, inns and hotels in cities of 100,000 population or over. On account of this limitation as to population the activities of the division have been confined to the city of Chicago where an office is maintained at 130 North Wells Street.

### INSPECTIONS

During the fiscal year ending June 30, 1920, 443 lodging houses, boarding houses, taverns, inns and hotels were measured and 278 re-measured. At the time of inspection there were 10,805 lodgers in these lodging houses which contained a total of 14,495 rooms. The legal capacity of these lodging houses was 34,544.

The following table (Table XXII) shows the total number of inspections made during the fiscal year with the number of rooms, the number of lodgers occupying the quarters and the present legal capacity:

TABLE XXII.

	Supplemental inspections.	Rooms.	Lodgers.	Present capacity.
<b>1919</b>				
July.....	398	8,788	5,892	12,078
August.....	519	15,160	10,714	20,963
September.....	408	11,454	8,543	14,442
October.....	385	21,144	8,634	14,530
November.....	285	5,084	3,612	6,490
December.....	393	12,510	9,802	16,010
<b>1920</b>				
January.....	4	60	48	81
February.....	42	988	748	1,142
March.....	85	2,181	2,056	3,537
April.....	3	82	80	104
May.....	56	961	648	1,319
June.....	170	3,896	2,928	5,082
Total.....	2,748	82,308	53,705	96,078

During the year 226 premises previously occupied as lodging houses, were found to be vacant, 151 were occupied by other lines of business, and 36 were torn down.

During the months of January and February, 1920, all of the inspectors were assigned to the duty of serving notices on proprietors and

managers of lodging houses, boarding houses, taverns, inns and hotels, to file the sworn statement required by the State Department of Health Act and the Civil Administrative Code by March first of each year. The inspectors served 5,940 such notices upon proprietors and managers and reported the number of lodgers to be 109,694.

The proprietors and managers of lodging houses, boarding houses, taverns, inns and hotels, who failed to file a sworn statement with the county clerk on March 1, were served with a written notice directing them to file their statement within three days from date of service. During March, April and May, the inspectors served 2,439 of these second notices on proprietors and managers of houses in which there were 30,275 lodgers.

During February, March and May the inspectors were assigned part of the time to work in the office of the division and in the office of the county clerk, in connection with the filing of sworn statements, and making copies thereof for the department, as provided in the rules and regulations of the State Department of Health. The number of sworn statements filed with the county clerk for the year 1920 is 5,120, all of which have been copied by the inspectors and preserved in book form.

#### VIOLATIONS

From July 1, 1919, to June 30, 1920, 385 violations of the public health laws relative to lodging houses and boarding houses, have been reported. In each case, a written notice was served upon the proprietor or manager directing that objectionable conditions be corrected within a definite period of time, which in no instance exceeded ten days. At the expiration of the time given, reinspections were made and in all instances it was found that the orders had been complied with.

#### EDUCATIONAL SERVICE

During February, 1920, when influenza was prevalent in epidemic form, the inspectors of the division made a survey of sickness conditions in the lodging houses of the city of Chicago, reporting daily to the Commissioner of Health and mailing duplicate copies of reports to the State Department of Health at Springfield. These reports gave the name of the person afflicted, with his address and also gave the name of the disease, and whenever possible, the name of the attending physician. During the period from February 5 to February 18, inspectors located forty seriously sick persons in the lodging houses of the city, nineteen of whom were suffering from influenza, nineteen from pneumonia and two from active tuberculosis.

## DIVISION OF PUBLIC HEALTH INSTRUCTION

SAMUEL W. KESSINGER, *Acting Chief*

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At the end of the third year the Division of Public Health Instruction, while strictly speaking in its formative period, seems to have struck its stride and is now fully demonstrating the wisdom of its creation.

The routine duties of the division, such as the issuance of the Illinois Health News, and bulletins from time to time concerning the various diseases which threaten the public health, have heretofore been so fully set forth that little remains to be added for the information of the public.

### EDUCATIONAL ACTIVITIES

As new phases of child welfare work are developed complete information in pamphlet form is prepared for distribution by this division. This is also true of the progress made by each of the divisions comprising the State Department of Health.

With the steady increase in the number of clinics throughout the State for crippled children and those for the treatment of tuberculosis and social diseases, there has arisen a steady and constantly increasing demand for authentic information. This demand is being met as rapidly as the specialists in charge of the work of the several divisions of the department can prepare and turn it over to the Division of Public Health Instruction for printing and distribution.

There has been a general awakening of the public along the line of welfare work and health promotion. Extra-governmental health movements are being organized in many communities, calling for the active cooperation of the Division of Public Health Instruction in the matter of furnishing literature and speakers for their health programs.

During the past year the news service of this division has been systematized with most gratifying results. It has been the object of the division to place genuine health news concerning the activities of the State Department of Health and of the various communities of the State before the people in the shortest and most readable style. The newspapers of the State are to be congratulated for their hearty cooperation in this campaign for better health in Illinois. Without that cooperation but little could have been accomplished. With it, there is no doubt but that Illinois will stand first among the states of the Union in net results along the lines of health promotion and disease prevention.

## HEALTH PROMOTION WEEK

On March 26 and 27, 1919, the House and Senate, respectively, Fifty-first Illinois General Assembly, passed a joint resolution designating the weeks beginning on the second Sunday in the month of May, 1919 and 1920, as Health Promotion Weeks throughout the State. The State Department of Health was designated as the agency through which the activities of the weeks should be carried out. A vast amount of organization work was done in the campaign of 1919 involving an expenditure of more than \$8,000. The history of that campaign was written into the second annual report of the Division of Public Health Instruction.

Calling on the organizations effected in 1919 by means of the press service and without the expenditure of any funds beyond the average current expenses, the Health Promotion Week of 1920 was carried out generally throughout the State in a manner most gratifying to all concerned. Physicians, school authorities, the press, the pulpit and the general public cooperated to make the week a grand success. The press generally has taken up the idea and is calling for a continuous "keep clean" campaign instead of a once-a-year clean-up.

For the further information of the public the activities of the Division of Public Health Instruction are given under the heading:

## EXHIBITS AND SPEAKERS

During the past few years the Department of Public Health has developed a very extensive and complete collection of exhibit material, consisting of a large mechanical exhibit, motion picture films, lectures illustrated by stereoptican slides and colored posters dealing with all phases of public health.

The mechanical exhibit accompanied by an experienced operator has been shown at seven county fairs during the year. Slides and lectures were sent to twelve high schools and woman's clubs. The motion picture films and the colored posters were in constant use, the films being sent to 35 communities and parcel post packages of the posters to 22 communities.

Fifty-five of the cartoon cuts which are used for the covers of the monthly publication, "Illinois Health News," were loaned for use in publications throughout this and neighboring states.

The motion picture films and the subjects treated are as follows:

*The Rat Menace.*—This film was prepared with a view to educating the public to the importance of getting rid of the rat, and shows the great harm done by this pest and ways to eradicate it. It is a convincing argument for the extermination of the rat.

*An Equal Chance.*—The public health nurse and her work are presented in this film, and answers are given to the questions, "What is a Public Health Nurse? Whom does she serve and how? Why is she one of Society's Indispensables?" Besides the demonstrations of bedside care, home instruction and country school nursing which are woven into the body of the story, accurate representations of various other branches



of public health nursing such as maternity care, infant welfare and tuberculosis are included without breaking the thread of the dramatic narrative.

*The Priceless Gift of Health.*—The story illustrated in this picture is one of the "child welfare" variety, showing the career of two boys, cousins, one of whom grew up under hygienic conditions to healthy manhood, while the other boy, whose mother thought "any milk was good enough so long as it was cheap," allowed him to grow up improperly cared for with the result that he was unfitted for life's work.

*The Great Truth.*—The ravages of consumption and the possibility of its cure are graphically and dramatically portrayed.

*Tommy's Birth Certificate.*—An educational picture of human interest to impress upon the public the importance and necessity of recording births, setting forth the embarrassments and misfortunes that may beset any individual whose birth has not been recorded.

*Summer Babies.*—The proper care of babies in summer time and the work of the child welfare nurse is presented.

*The Fly Danger.*—A valuable contribution to education in public hygiene by showing the part that flies play in the spreading of disease. This subject is full of human interest and action and is within the understanding of the child as well as the adult.

*The Fly Pest.*—This portrays the modes and methods of infection by flies.

*Health Promotion Week Parade.*—A short film showing the parade of school children and health organizations in the city of Springfield during the 1919 Health Promotion Week.

The chiefs of the several divisions of the department are usually available for public lectures on their individual lines of activity and this service has been very much in demand by clubs, societies, colleges and high schools. Representatives of the department have also appeared before various medical and scientific bodies for the purpose of presenting papers or of giving clinical instruction.

## DIVISION OF SOCIAL HYGIENE

G. G. TAYLOR, M. D., *Chief*

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In an effort to control, suppress and eradicate venereal diseases, the alarming prevalence of which was demonstrated during the physical examination of men called for military duty under the Selective Service Act, the Division of Social Hygiene was created within the Department of Public Health on July 1, 1918. The Chamberlain-Kahn amendment to the Army Appropriation Bill passed by the Sixty-fifth Congress appropriated the sum of \$2,000,000 for the assistance of states in the control of venereal diseases for the two years ending June 30, 1920. This money was divided according to population among the states creating special divisions for the control of venereal diseases and adopting laws or enacting legislation requiring that these diseases be reported.

For the year ending June 30, 1919, the sum of \$66,307.51 was made available from this Government appropriation. The second year's allotment was conditioned upon an appropriation by the State legislature to be matched dollar for dollar with a like amount of Federal funds. The Fifty-first General Assembly appropriated for the use of the Division of Social Hygiene the sum of \$100,000 for the two years ending June 30, 1921. This was matched by an allotment of \$50,000 for the second year's work from the Federal Government, so that there was available for the year ending June 30, 1920, the sum of \$100,000.

The work of the division has proceeded along lines established during the first year, conforming, in general, to the venereal disease program suggested by the Interdepartmental Social Hygiene Board, which board was created by act of Congress to administer funds appropriated for venereal disease control. A study of the venereal disease situation has demonstrated that these diseases are, in fact, the most prevalent of all infectious diseases and are responsible for more human suffering and more expense to Government, states and counties than any other class of infectious diseases.

Regulations for the control of venereal diseases adopted by the Department of Public Health declare venereal diseases, namely, syphilis, gonorrhea and chancre, to be contagious, infectious, communicable and dangerous to public health. The regulations differ from those in force against other infectious diseases in that the venereally infected person under treatment by a licensed physician is reported in such a manner that his name is not revealed so long as he respects the requirements of the regulations, (continuing under treatment until cured of his infec-

tiousness and refraining from exposing others to infection). The regulations require the treatment by counties of persons unable to pay for medical attention. They provide for isolation and quarantine where such extreme measures are necessary to control the patient.

During the year ending June 30, 1920, a total of 31,876 cases were reported by clinics, physicians and druggists. It is estimated that this represents less than 25 per cent of the number of venereally infected persons in the State of Illinois. It has not been the policy of the Division of Social Hygiene up to the present time to urge the prosecution of physicians and others for failure to report, it having been considered advisable to first disseminate information to the general public concerning the serious character of these diseases and their far-reaching after-effects. Unless the source of infection is named, the value of reports is, in a large measure, lost, and, in order that this information may be forthcoming, the voluntary or willing cooperation of the physician is necessary. Wholesale prosecution of physicians for failure to report would doubtless result in many more reports but in much less information concerning sources of infection, and, in the end, little would be accomplished.

Gonorrheal infection causes blindness in infants. Syphilis causes locomotor ataxia and paresis. It is frequently the cause of feeble-mindedness in children. It is conservatively estimated that 20 per cent of the inmates of State charitable institutions are in their present condition as a result of a venereal disease contracted or inherited. From an economic standpoint alone, the control of venereal diseases is justifiable.

The activities of the Division of Social Hygiene are divided into:

1. The treatment of disease carriers.
2. Repressive measures.
3. Educational measures.

and this report is divided under these general heads.

#### TREATMENT

Because of the lack of proper information concerning the serious character of and the ravages wrought by venereal diseases less than 50 per cent of venereally infected persons have been receiving proper treatment at the hands of competent medical men. The average physician, because of a disinclination toward this class of work, or because of the lack of time to give proper treatment, is reluctant to treat patients infected with venereal disease. The services of a specialist are beyond the means of many patients suffering with venereal disease, consequently some provision must be made for the treatment of a large number of patients who cannot provide it for themselves or who are attempting to treat themselves with patent medicines or with prescriptions passed from one to another. Rule 16 of the department regulations for the control of venereal diseases provides as follows:

Upon being advised of a case of venereal disease in any person who is unable to pay for the necessary medicines, medical attention or hospital care, local health authorities shall report the case to the overseer of the poor, who shall supply such medicine, medical attention and hospital care.

In the larger cities it has been found economical and more satisfactory to establish clinics for the treatment of such patients. At the close of the year 1919 clinics were in operation in the following cities: East St. Louis, Rockford, Decatur, Springfield and two in Chicago. During the year ending June 30, 1920, additional clinics have been established in the following cities: Alton, Cairo, Carlinville, Chicago Heights, Litchfield, Moline, Peoria, Rock Island, Waukegan, West Hammond and five in Chicago. With the exception of Rock Island and those in Chicago, the Division of Social Hygiene has provided equipment for all these clinics. Clinical equipment remains the property of the Department of Public Health and is loaned to the various clinics under a contract which provides that the Division of Social Hygiene shall have general supervision over clinics and that no change in management or policy shall be made without the consent of the division. The operating expense of clinics is borne jointly by the Division of Social Hygiene and the communities in which clinics are located. In most instances the local expense is cared for by the city and county jointly or by voluntary contribution made by individuals and industries. In the case of the Rock Island clinic, equipment was provided by the Rock Island County Board of Supervisors and the operating expense is borne by the board, a monthly subsidy being paid by the division. Chicago clinics have been equipped by the Chicago City Health Department, which department also provides quarters. A monthly subsidy is paid each of them by the Division of Social Hygiene.

It is the policy of the Division of Social Hygiene to operate clinics in such a manner as to not pauperize the public or infringe upon the legitimate practice of any physician.

The following is a brief summary of the activities of clinics during the year ending June 30, 1920:

#### CLINIC SUMMARY

	Male.	Female.
Patients hospitalized .....	908	452
Number patients discharged.....	1,561	1,063
Number patients discontinuing treatment.....	2,500	796
Number patients placed in detention.....	40	20
Total number cases of disease treated.....		30,005
Total number of patients treated.....		28,984
Total number treatments administered (including arsphenamine).....		98,754
Number Wassermann tests.....		13,090
Number of microscopic examinations for the treponema pallidum.....		878
Number of microscopic examinations for the gonococcus.....		8,732
Number of doses of arsphenamine administered.....		16,819

During the year ending July 1, 1920, 12,797 ampules of arsphenamine, the drug used in the treatment of syphilis, have been distributed to clinics; 734 ampules to overseers of the poor; and 952 ampules to



physicians for the treatment of patients who were unable to obtain the drug but who had made a satisfactory arrangement to compensate the physician for administering it.

The following is a tabulation of venereal diseases reported to the Illinois Department of Public Health for the year ending June 30, 1920:

## REPORTED CASES OF VENEREAL DISEASES

Age:		Jail .....	30	
1-12.		Elsewhere .....	211	6,910
12-16.		Source of Infection:		
16-20.		Inherited .....	63	
20-30.		Contracted .....	942	
30-40.		Investigated .....	729	1,734
40-50.				
50 and over.		Stage:		
Sex:		Primary or acute.....	3,888	
Male .....	5,429	Secondary or subacute..	1,354	
Female .....	1,481	Tertiary or chronic....	1,668	6,910
Color:		Social Status:		
White .....	6,182	Single .....	4,290	
Black .....	728	Married .....	2,073	
Occupation:		Widowed .....	325	
Clerk .....	569	Divorced .....	222	6,910
Chauffeur .....	106	Place:		
Cook or waiter.....	148	City .....	5,728	
Laborer .....	2,554	Town .....	1,182	6,910
Idle .....	1,067	Laboratory Findings:		
Farmer .....	329	Positive .....	4,943	
Stenographer .....	35	Negative .....	237	
Miscellaneous .....	1,905	None .....	1,730	6,910
Residence:		Patients under treatment.....	6,910	
Home .....	4,779	Handling foodstuffs .....	333	
Boarding house .....	1,454	Discontinued employment .....	370	
Hotel .....	230			
Hospital .....	67			
Institution .....	139			
Number complete reports received from physicians, from which above tabulation was made.....				6,910
Number incomplete reports received from physicians, druggists, State institutions, clinics, and the Chicago City Health Department.....				24,966
Total cases reported for the year ending June 30, 1920.....				31,876
Total cases reported for the year ending June 30, 1919.....				16,915
Increase .....				14,961

By correspondence with physicians, by personal interviews and by talks to county medical societies, representatives of the division are constantly endeavoring to secure the voluntary cooperation of physicians in reporting, and reports are being received in constantly increasing numbers. Physicians are coming to realize that a license to practice medicine conferred by the State carries with it an obligation which can be best discharged by contributing in every possible way toward the protection of the public health, and in order that the public health may be conserved, communicable diseases must be promptly reported to health officials.

## REPRESSING ACTIVITIES

It will be admitted that to prevent the spread of venereal disease, two things must be accomplished, that is, the cure or rendering noninfectious of every carrier and the prevention of contact between healthy

and diseased persons. Jurisdiction of public health departments in striving to accomplish the first proposition will not be questioned. In an attempt to prevent the contact between healthy and diseased persons, considerable opposition is met.

It will also be admitted that there is not a more certain and successful method of preventing the spread of syphilis and gonorrhea than by minimizing the opportunity of exposure to these diseases. Public prostitution is admittedly the most prolific source of venereal disease since reliable data gathered in every community demonstrates without possibility of refuting that a high percentage of all prostitutes are infected with syphilis or gonorrhea or with both. It would seem to be a matter of extreme importance to health officers to prevent this disease spreading business. Laws and ordinances against prostitution, professional and clandestine, have been on the statute books for years. They were placed there in compliance with public opinion and by duly constituted legislative bodies. These laws should receive the same respect from officers who have sworn to obey the law as do laws for the protection of person and of private property. Until the law is changed or repealed, all citizens have a right to demand that laws directed against prostitution be rigidly enforced.

Cooperation of city and county officials is essential to the complete success of venereal disease control. Such cooperation was readily obtained while the country was at war because the elimination of venereal disease was looked upon as a patriotic measure. With the return of peace there has been a regrettable tendency on the part of many civil officials to relapse into their former state of disregard concerning the apprehension of disease spreading prostitutes. Since venereal diseases are far more dangerous and far more destructive than any other of the much feared contagious diseases, it would seem that public health officials and officials generally should be as energetic in their efforts to suppress the venereal disease carrier as they are in suppressing carriers of such diseases as smallpox, diphtheria and scarlatina.

During the past year the division has attempted to keep alive the interest of civil officials and the general public in the repression of commercialized vice but has encountered a feeling of indifference, no doubt due to a reaction which was to be expected following the strenuous activities occasioned by the World War. Officers of the division have made numerous investigations into vice conditions in all parts of the State and these conditions have been materially improved. In the absence of direct legislation requiring medical examination of all persons arrested under conditions rendering them venereal disease suspects, and because of the inertia manifested by some part-time local health officials who are inadequately compensated for their services, many disease spreaders escape. Because of the inactivity of local health authorities, it has been

necessary to send investigators from the division to all parts of the State to follow-up and get under treatment reported sources of infection.

#### OPHTHALMIA NEONATORUM

Since ophthalmia neonatorum, commonly known as infants' sore eyes, is in nearly all cases the result of gonorrheal infection contracted at the time of birth, investigation of such cases properly becomes the work of the Division of Social Hygiene.

An Act for the prevention of blindness from ophthalmia neonatorum, approved June 24, 1915, renders the reporting of such cases by physicians and midwives obligatory. In accordance with the provisions of this act, the State Department of Public Health provides a prophylactic solution, which, if timely used, will in almost all cases prevent this disease.

During the past year five midwives and three physicians have been prosecuted under the Ophthalmia Neonatorum Act, all having been convicted.

#### EDUCATIONAL WORK

Before the institution of the venereal disease campaign, no attempt had ever been made to give the public reliable information concerning sex hygiene. In the teaching of modern physiology in public schools and high schools, little, if any, consideration is given to the physiology of the sex organs, consequently the youth of the country have been depending upon such information as they could get from their parents. On account of the natural embarrassment which has always accompanied any mention of facts bearing upon the sex relation, and because of ignorance concerning the proper method of transmitting such information to children without creating an abnormal curiosity, sex education has been sadly neglected.

The Division of Social Hygiene has had neither authority nor desire to introduce sex education into public schools. Not every teacher can impart such instruction successfully and it is believed that a capable instructor in sex hygiene must be equipped by nature as well as by training. Lectures on the subject of sex hygiene and venereal diseases have been delivered to the general public, to teachers at their quarterly institutes, to segregated audiences of men and women employed in industries and in offices; to students in commercial colleges, in literary colleges and in military schools. These lectures have been illustrated by motion picture films depicting the effects of venereal disease and an audience of from two thousand to twenty-five hundred is not uncommon.

Placards giving information concerning venereal diseases have been posted in railway station toilets, in railway cars, in comfort stations, hotel and theatre wash rooms and in the wash rooms of large industrial plants and office buildings.

A "Keeping Fit" exhibit, which is shown to boys, has been displayed in 119 high schools in the State during the past year, making a total of 243 showings and reaching 50,951.

That the interest of the general public in sex hygiene has been permanently aroused is evidenced by the continued requisitions which have been received for pamphlets dealing on this subject. During the past year a total of 654,205 pamphlets have been distributed.

In an effort to arouse the interest of the medical profession in the proper treatment of venereal diseases, two motion picture films have been secured. These films deal with the diagnosis and treatment of syphilis and gonorrhea and will be shown at meetings of the various county medical societies.

Treatment and repressive measures are considered necessary in the control of venereal diseases but permanent and lasting benefits can only accrue through educational measures. Much consideration is being given to the preparation of a course of study which may be gradually introduced into public schools.

#### EDUCATIONAL SUMMARY

Number lectures given.....	572	
Attendance .....		97,357
Number times slides and charts shown.....	322	
Attendance .....		49,387
Number film showings without lecture.....	126	
Attendance .....		18,112
Total attendance .....		164,856
Cities rated .....	37	
Number of cities under 10,000 visited.....		183
Number of cities 10,000 population and over.....		269
Total .....		452



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FOURTH ANNUAL REPORT  
OF THE  
DEPARTMENT OF PUBLIC HEALTH

*Illinois*

July 1, 1920

TO

June 30, 1921



ISAAC D. RAWLINGS, M. D., Director





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ILLINOIS STATE JOURNAL CO.  
SPRINGFIELD, ILLINOIS

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## LETTER OF TRANSMITTAL.

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*To the Governor:*

In compliance with the provisions of the Civil Administrative Code, I have the honor to submit to you the accompanying report of the Department of Public Health for the fiscal year, July 1, 1920, to June 30, 1921. The report covers briefly the activities of the various divisions of the department during the fiscal period.

Respectfully submitted,

ISAAC D. RAWLINGS, M. D., *Director.*

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STATE OF ILLINOIS.  
**THE DEPARTMENT OF PUBLIC HEALTH.**

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ISAAC D. RAWLINGS, M. D., *Director*.<sup>1</sup>

Office of Assistant Director Vacant.<sup>2</sup>

AMOS SAWYER, *Chief Clerk*.

---

DIVISION OF COMMUNICABLE DISEASES.

JOHN J. MCSHANE, M. D., DR. P. H., *Chief*.

DIVISION OF TUBERCULOSIS.

Office of Chief Vacant.<sup>2</sup>

DIVISION OF SANITATION AND ENGINEERING.

HARRY F. FERGUSON, *Chief Engineer*.

DIVISION OF VITAL STATISTICS.

SHELDON L. HOWARD, *Registrar of Vital Statistics*.

DIVISION OF CHILD HYGIENE AND PUBLIC HEALTH NURSING.

C. W. EAST, M. D., *Chief*.

DIVISION OF SURVEYS AND RURAL HYGIENE.<sup>3</sup>

BAXTER K. RICHARDSON, *Supervisor of Surveys*.

DIVISION OF DIAGNOSTIC LABORATORIES.

THOMAS G. HULL, M. S., PH. D., *Chief*.

DIVISION OF HOTEL AND LODGING HOUSE INSPECTION.

W. W. McCULLOCH, *Superintendent*.

DIVISION OF PUBLIC HEALTH INSTRUCTION.

BAXTER K. RICHARDSON, *Chief*.

DIVISION OF SOCIAL HYGIENE.

G. G. TAYLOR, M. D., *Chief*.

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<sup>1</sup> Appointed February 2, 1921.

<sup>2</sup> Dr. George T. Palmer, resigned March 1, 1921.

<sup>3</sup> Ceased to function December 1, 1920; later fused with Division of Sanitation and Engineering.



## THE DEPARTMENT OF PUBLIC HEALTH.

ISAAC D. RAWLINGS, M. D., *Director.*

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The fiscal year ending June 30, 1921, witnessed a number of events that carried with them distinct and pronounced influences over the State Department of Public Health. Not least among these were the inauguration of a Governor committed to a broad public health policy, a change in the directorship of the department and the additional provisions of the Fifty-second General Assembly for public health administration. Dr. Isaac D. Rawlings was appointed Director of Public Health on February 2, 1921, so that the history of the department for the year was divided almost equally under two executive officers. On March 1, the Assistant Director resigned and no new appointment had been made at the end of the fiscal year.

For the first seven months of the year the department was concerned principally with carrying out activities along lines established after the close of the World War. The new Director, however, upon his induction into office, found before him the task of executing new policies outlined in the Governor's inaugural address, as well as the continuation of activities standard in the administration of public health. The problem of handling the situation successfully was complex, embracing as it did the necessity for new legislative action and rather large increases in the personnel.

Broadly speaking, the new administration committed itself as favoring three distinct public health measures, viz: (1) The establishment of full-time medical health officers in every county of the State; (2) the strict enforcement of public health laws already enacted, particularly those relating to the prompt and complete reporting of births and cases of communicable diseases; and (3) an expansion in educational activities with special attention to training schools for home and public health nursing and schools of instruction for health officers.

Another item of no little importance that faced the new Director was the fact that the funds for purchasing antitoxin, a product which the department distributes free to citizens of the State, were completely depleted and the supply of antitoxin entirely exhausted, although the demand for this specific was unusually heavy.

### LEGISLATION.

With the Fifty-second General Assembly already in session at the time of his appointment, the Director soon succeeded in securing an

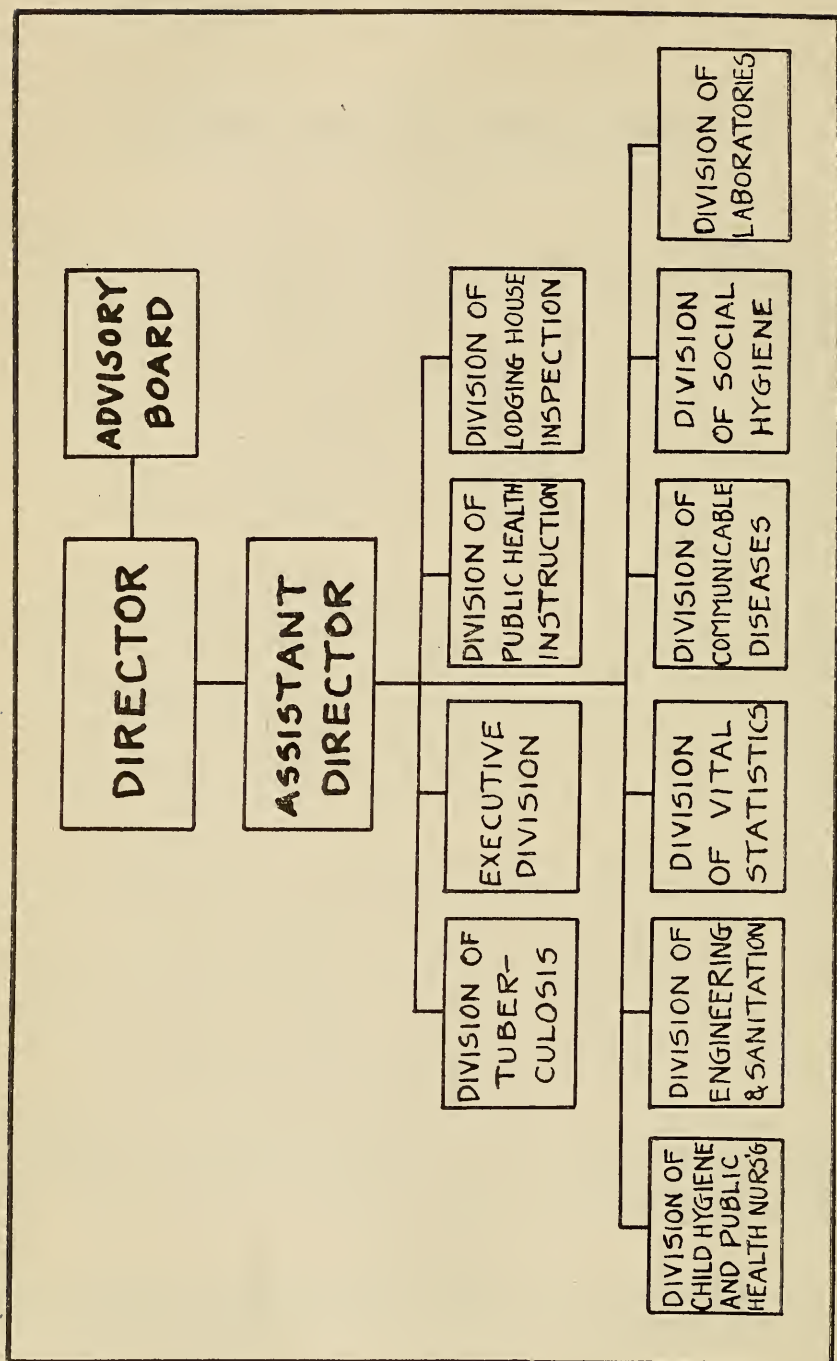


Figure 1.—Departmental Organization for Biennium, 1921-23.



emergency appropriation of \$30,000 for the purchase of antitoxin. The wisdom of this measure was demonstrated during the remaining part of the year when diphtheria was rather unusually prevalent and almost the entire sum was expended for the purchase and distribution of antitoxin in quantities commensurate with the demand.

This emergency appropriation being disposed of efforts were made at once to secure legislative action necessary to the success of new measures for health protection. To this end a bill was drafted and a campaign launched to put upon the statute books a law providing for the employment, from State funds, of a full-time medical health officer in every county of the State. The same bill carried provision whereby counties would be authorized to employ additional personnel, establish quarters and purchase equipment necessary for a well rounded and efficient public health service. While this bill failed to be enacted, its passage in the Senate with but one dissenting vote and introduction in the House demonstrated so much favorable public opinion for an extension of public health service that a substitute budget item was embodied in the appropriation to the department. The substitute provides funds for maintaining 25 district health superintendents, or an increase of 20 over former years. This will permit a considerable extension of service and will give the people a much more satisfactory public health administration than formerly, but in no sense does it offer the possibilities for practical results that could have been obtained under the original bill. In addition to these things, the legislature set aside an increase over the last biennium of \$100,000 for social hygiene service to replace a similar amount formerly provided by Federal grant. This came at a time when Federal aid for this work had been withdrawn and further progress or even the continuation of anti-venereal disease work already begun would have suffered a severe set-back without the increased appropriation. A general increase in salaries was also granted so that employees of the department will enjoy, during the next two years, incomes more justly comparable with those of the industrial world. The total appropriation to the Department of Public Health for the next biennium amounts to \$1,083,759, compared with \$660,610 for the last biennium. It corresponds to an annual per capita appropriation of about 8½ cents.

#### ENFORCEMENT OF VITAL STATISTICS LAWS.

Besides these efforts to secure the enactment of laws and needed appropriations no little time was consumed during the last five months of the fiscal year in developing practical means for enforcing the vital statistics laws and expanding the educational functions of the department. With particular emphasis on the registration of births and the reporting of communicable disease cases the Director has sought especially the cooperation of the medical profession. To this end he has delivered addresses before the State and many local medical societies, and has

held numerous conferences in Springfield and elsewhere in Illinois. At the close of the year the future is full of promise for bringing about birth registration sufficiently satisfactory to gain admission into the United States registration area for births and the probability for early success seems very reassuring.

#### COOPERATION.

Points of contact for cooperating with governmental and extra-governmental agencies engaged in work of a public health nature have been created or welded more firmly together. These include the powerful national organizations as well as State and local. Policies in reference to coordinating the work of some of these agencies with that of the department have been formed with the purpose of rendering in local communities a well balanced public health service free from over-emphasis of any particular task and without greater expense than many localities now bear. The proposition of cooperation has not been initiated in all cases by the department and neither has it been limited to agencies, the purpose of which is largely public health work. On the other hand the accomplishments of the department, especially in the field of child and infant care, have helped stimulate such organizations as the Shriners, International Rotary Association, various units of the Traveling Men's Protective Association, life insurance companies of national character and various women's institutions to take an active interest in these important activities. That the service of the department has attracted the cooperation and commendation of such powerful and practical organizations as these seems indeed important and worthy of mention.

#### EDUCATION.

More immediate results have attended the efforts of the department directed toward an expansion of educational activities. The monthly bulletin of the department has not only been converted into a popular and practical publication that has elicited the unqualified praise of physicians, public health workers and laymen alike, but it has been issued promptly each month since February. Hardly less important has been the addition to the loan service of considerable exhibit material, designed by the department and constructed under its supervision. This material consists of models and other devices that graphically portray certain fundamental principles in preventive medicine and are so constructed as to permit easy transportation from one point to another.

#### DEPARTMENTAL ORGANIZATION.

Within the department a number of minor but important changes have been made under the new Director. Perhaps the most far reaching of these was the innovation of weekly conferences with the division chiefs which has brought about an intra-departmental cooperation and coordination not heretofore realized. At these meetings the policy and

problems of the department are discussed and lines of action are determined. The chiefs, are, therefore, able to acquire a clear insight into the activities and problems of the department as a whole and of the various individual divisions so that vague and hazy notions are replaced by an active knowledge of purpose and policy. A weekly conference of this kind is all the more useful and necessary because the department has long since outgrown its original quarters and the several divisions are scattered throughout the Capitol Building and in the business section of Springfield.

One of the weekly conferences each month is devoted to a discussion and study of current public health literature. The periodicals for which the department subscribes (24 in number), as well as various reports and publications received through an exchange of such service, are assigned to the different division chiefs who abstract all of the more important articles. These abstracts are read and discussed at the meeting. In this way all members of the department keep informed along all lines of activities in the field of public health and are kept abreast of the times in reference to new procedures.

During the latter part of the fiscal year the adoption of a completely new set of executive regulations that govern the functioning of the department has had the effect of binding together still more closely its various units and of keeping the Director in close contact with all activities. For the purpose of convenience and efficiency a few changes in the former division organization have been made. At the close of the year the division arrangement established was as follows:

Executive Division;

Division of Communicable Diseases;

Division of Tuberculosis;

Division of Sanitation and Engineering;

Division of Vital Statistics;

Division of Child Hygiene and Public Health Nursing;

Division of Diagnostic, Biologic and Research Laboratories;

Division of Public Health Instruction;

Division of Social Hygiene;

Division of Lodging House Inspection.

Several of the divisions have not been manned to full force but the provisions of the Fifty-second General Assembly have opened the way for securing a personnel for each that will reasonably meet the requirements for work mapped out.

Even with the limited personnel the divisions in almost every case show an increase in activities over former years and some have undertaken and accomplished a great deal along new lines of endeavor. The Division of Sanitation absorbed that of surveys and rural hygiene so that all sanitary service, whether in the nature of routine or research, now comes under the supervision of the chief sanitary engineer. No

important reorganization changes have been made other than that of the executive officer and his assistant, although there were several transfers and additions in the department personnel.

#### RULES AND REGULATIONS FOR CONTROLLING DISEASE.

Toward the close of the year a complete revision of the rules and regulations governing the quarantine and control of communicable diseases was accomplished. A number of important changes were made so that the regulations are now in keeping with the latest and most scientific thought, while cities with well qualified and efficient health departments can enjoy a considerable amount of freedom in the matter of quarantine. While only Chicago and possibly one or two other municipalities are at present eligible to exercise the responsibilities of this modified regulation it is believed that many cities will be stimulated to qualify under the provisions required. Preparation has been made to publish the new rules and regulations in attractive pamphlet form and to supplement them with a number of special pamphlets, the material for which is ready for the printer. Public demands for educational matter of this kind have been increasingly strong and it is felt that through its widespread distribution great good can be accomplished.

A State law empowers the State Department of Registration and Education to adopt and enforce rules providing for the sanitary regulation of barber shops but prior to the adoption of such rules they must be approved by the State Department of Public Health. During the term of office of the present Director of Public Health a set of such rules, that had awaited the approval of the department for several years, were approved and are now in force.

By and large, Illinois has experienced a healthful year. No severe epidemic of serious proportions has appeared. The State has enjoyed one of the lowest mortality rates ever recorded. These things, together with the activities of the department for the year are discussed in detail in the division reports on the following pages.



## EXECUTIVE DIVISION.

AMOS SAWYER, *Chief Clerk.*

The Executive Division of the State Department of Public Health is made up of the chief clerk and a staff of accountants and clerks as shown in the organization chart below. This division is charged with the general supervision of the clerical and stenographic force of all divisions and the records that pertain thereto. The status of the chief clerk is that of executive secretary of the department. In this capacity he is consulted, in the absence of the Director, by heads of divisions in reference to special important matters or emergencies requiring immediate attention. He also exercises supervision over pay rolls, accounts, contracts and other departmental records and the purchase and inventory of furniture and supplies.

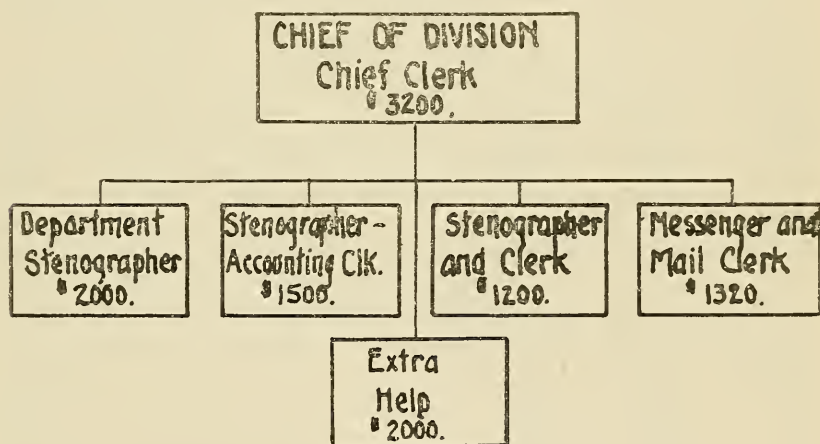


Figure II—Divisional Organization for Biennium, 1921-23.

During the fiscal year a number of unusual financial problems have presented themselves. The Fifty-first General Assembly made appropriations for several technical positions in the department that have not been filled. This is explained by the fact that unforeseen and extraordinary advances in salary scales swept the country so that the maximum salaries specified for these technical positions were not large enough to attract persons of proper qualifications and experience. The result has been that several divisions have not been able to secure the anticipated

personnel and consequently have not expanded in proportion to public demands for service. This has been especially true of the Divisions of Laboratories, Sanitation, Communicable Diseases and Child Hygiene and Public Health Nursing.

Another problem was that relating to the purchase of antitoxin for free distribution. Funds for this purpose were entirely exhausted long before the close of the year. Fortunately, however, the Fifty-second General Assembly was in session at the time and an emergency appropriation of \$30,000 gave relief in this instance.

During the year a great deal of time was devoted by the Executive Division to the preparation and presentation of the department budget for the coming biennium. All divisions were required to submit estimates for the period in conformity with the probable needs in each case. On the basis of these, together with due consideration to plans for new fields of service and the probable withdrawal of Federal aid in some cases, a practical budget was compiled and presented to the Department of Finance. All items contained therein were the result of careful study and painstaking consideration.

The other work of the division during the year has been along lines established in the past. No particularly difficult problems have arisen in this respect. On several occasions, particularly in connection with the exhibit at the State Fair, the annual Better Babies Conference and the campaign during Health Promotion Week it has been necessary to engage extra help of various kinds. These matters have been attended to with dispatch and in a manner that has proved entirely satisfactory.

The routine work of the division has been kept in good shape. All accounts of the department have been recorded in the proper way and are open to inspection by authorized persons at all times. Executive orders originating from the Director have been communicated to the various members of the department and contact with other organizations and the public has been maintained in a diplomatic and satisfactory manner.

TABLE I.

FINANCIAL STATEMENT OF THE DEPARTMENT OF PUBLIC HEALTH FOR THE CLOSING BIENNIIUM.

## GENERAL OFFICE.

Appropriated for.	Entire appropriation for biennium July 1, 1919, to June 30, 1921.	Bills paid.	Amount lapsed Sept. 30, 1921.
Salaries and wages.....	\$27,560	\$23,958	\$3,602
Salaries and wages from contingent.....		1,276	
Office expense.....	2,359	2,232	127
Office expense from contingent.....		176	
Travel.....	5,200	4,939	261
Operation.....	150	73	77
Operation from contingent.....		1,062	
Repairs.....	130	760	—630
Repairs from contingent.....		106	
Equipment.....	900	209	691
Equipment from contingent.....		1,578	
Contingent.....	7,200	*(4,198)	3,002
Sub-total.....	\$43,499	\$36,369	\$7,130
Printing.....	35,000	34,087	913
Total.....	\$78,499	\$70,456	\$3,043

Receipts from all sources July 1, 1919, to June 30, 1921, none.

\* Not included in total.

## COMMUNICABLE DISEASES.

Salaries and wages.....	\$78,080	\$66,795	\$11,285
Office expense.....	3,892	3,762	130
Travel.....	28,000	23,041	4,959
Operation.....	220	155	65
Repairs.....	155	240	—85
Equipment.....	635	624	11
Total.....	\$110,982	\$94,617	\$16,365

Receipts from all sources July 1, 1919, to June 30, 1921, \$211.00.

## DIAGNOSTIC LABORATORY.

Salaries and wages.....	\$17,760	\$13,153	\$4,607
Office expense.....	1,089	913	176
Travel.....	1,400	382	1,018
Operation.....	7,063	9,509	—2,446
Repairs.....	534	110	424
Equipment.....	1,050	1,150	—100
Total.....	\$28,896	\$25,217	\$3,679

Receipts from all sources July 1, 1919, to June 30, 1921, none.

## TUBERCULOSIS.

Salaries and wages.....	\$2,640		\$2,640
Office expense.....	725	\$ 658	67
Travel.....	4,000	1,054	2,946
Operation.....	20	5	15
Equipment.....	150	6	144
Total.....	\$7,535	\$1,723	\$5,812

Receipts from all sources July 1, 1919, to June 30, 1921, none.

TABLE I—Continued.

## SANITATION.

Appropriated for.	Entire appropriation for biennium July 1, 1919, to June 30, 1921.	Bills paid.	Amount lapsed Sept. 30, 1921.
Salaries and wages.....	\$44,160	\$41,788	\$2,372
Office expense.....	2,300	2,237	63
Travel.....	11,000	6,402	4,598
Operation.....	1,840	2,263	—423
Repairs.....	716	565	151
Equipment.....	1,660	1,981	—321
Total.....	\$61,676	\$55,236	\$6,440

Receipts from all sources July 1, 1919, to June 30, 1921, none.

## VITAL STATISTICS.

Salaries and wages.....	\$46,120	\$45,717	\$ 403
Office expense.....	4,120	3,949	171
Travel.....	9,700	6,727	2,973
Operation.....	15	—	15
Repairs.....	290	449	—159
Equipment.....	1,270	1,152	118
Total.....	\$61,515	\$57,994	\$3,521

Receipts from all sources July 1, 1919, to June 30, 1921, \$157.53.

## LODGING HOUSE INSPECTION.

Salaries and wages.....	\$21,000	\$19,081	\$1,919
Office expense.....	2,950	2,734	216
Travel.....	300	157	143
Operation.....	15	—	15
Repairs.....	10	1	9
Equipment.....	50	—	50
Total.....	\$24,325	\$21,973	\$2,352

Receipts from all sources July 1, 1919, to June 30, 1921, \$50.00.

## BIOLOGICAL LABORATORY.

Salaries and wages.....	\$16,160	\$14,185	\$ 1,975
Office expense.....	1,200	854	346
Travel.....	1,100	238	862
Operation.....	85,221	71,861	13,360
†Operation, emergency.....	30,000	29,912	88
Repairs.....	370	317	53
Equipment.....	1,500	966	534
Total.....	\$135,551	\$118,333	\$17,218

Receipts from all sources July 1, 1919, to June 30, 1921, \$289.27.

† Appropriated by the Fifty-second General Assembly.



TABLE I—Continued.

## SURVEYS AND RURAL HYGIENE.

Appropriated for.	Entire appropriation for biennium July 1, 1919, to June 30, 1921.	Bills paid.	Amount lapsed Sept. 30, 1921.
Salaries and wages.....	\$10,200	\$9,931	\$ 269
Office expense.....	250	44	206
Travel.....	5,500	2,724	2,776
Operation.....	860	452	408
Repairs.....	110	72	38
Equipment.....	480	342	138
Total.....	\$17,400	\$13,565	\$3,835

Receipts from all sources July 1, 1919, to June 30, 1921, none.

## PUBLIC HEALTH INSTRUCTION.

Salaries and wages.....	\$9,440	\$8,773	\$667
Office expense.....	2,165	3,134	—969
Travel.....	800	672	128
Operation.....	506	183	323
Repairs.....	1,260	1,081	179
Equipment.....	1,260	1,488	—228
Total.....	\$15,431	\$15,331	\$100

Receipts from all sources July 1, 1919, to June 30, 1921, none.

## SOCIAL HYGIENE.

Salaries and wages.....	\$30,000	\$30,000	-----
Salaries and wages from contingent.....	-----	3,925	-----
Salaries and wages from contingent, emergency.....	-----	3,345	-----
Office expense.....	10,000	9,000	\$1,000
Travel.....	12,000	12,000	-----
Travel from contingent.....	-----	2,049	-----
Travel from contingent, emergency.....	-----	392	-----
Operation.....	19,000	19,000	-----
Operation from contingent.....	-----	9,420	-----
Operation from contingent, emergency.....	-----	963	-----
Repairs.....	3,600	1,900	1,700
Repairs from contingent.....	-----	6	-----
Equipment.....	10,000	8,000	2,000
Contingent.....	15,400	*(15,400)	-----
+Contingent, emergency.....	4,700	*(4,700)	-----
Total.....	\$104,700	\$100,000	\$4,700

Receipts from all sources July 1, 1919, to June 30, 1921, none.

\* Not included in total.

†Appropriated by Fifty-second General Assembly.

## CHILD HYGIENE AND PUBLIC HEALTH NURSING.

Salaries and wages.....	\$22,480	\$21,522	\$ 958
Salaries and wages from contingent.....	-----	1,974	-----
Office expense.....	550	542	8
Office expense from contingent.....	-----	367	-----
Travel.....	16,800	13,647	3,153
Travel from contingent.....	-----	649	-----
Operation.....	180	46	134
Repairs.....	25	-----	25
Equipment.....	265	254	11
Contingent.....	4,800	*(2,990)	1,810
Total.....	\$45,100	\$39,001	\$6,099

Receipts from all sources July 1, 1919, to June 30, 1921, none.

\* Not included in total.

TABLE I—Concluded.

## RABIES.

Appropriated for.	Entire appropriation for biennium July 1, 1919, to June 30, 1921.	Bills paid.	Amount lapsed Sept. 30, 1921.
Salaries and wages.....	\$4,000	\$2,522	\$1,478
Total.....	\$4,000	\$2,522	\$1,478

Receipts from all sources July 1, 1919, to June 30, 1921, none.

## SOCIAL HYGIENE (FEDERAL)

Salaries and wages.....	Lump sum appropriation	\$56,897	-----
Office expense.....		4,023	-----
Travel.....		7,485	-----
Operation.....		24,683	-----
Repairs.....		1,020	-----
Equipment.....		5,892	-----
Total.....	\$100,000	\$100,000	-----

Receipts from all sources July 1, 1919, to June 30, 1921, none.

## \*\*RECAPITULATION.

Salaries and wages.....	\$329,600	\$297,425	\$32,175
Salaries and wages from contingent.....	-----	10,520	-----
Office expense.....	31,600	30,059	1,541
Office expense from contingent.....	-----	543	-----
Travel.....	95,800	71,983	23,817
Travel from contingent.....	-----	3,090	-----
Operation.....	145,090	133,459	11,631
Operation from contingent.....	-----	11,445	-----
Repairs.....	7,200	5,495	1,705
Repairs from contingent.....	-----	112	-----
Equipment.....	19,220	16,172	3,048
Equipment from contingent.....	-----	1,578	-----
Contingent.....	32,100	*(27,288)	4,812
Sub-total.....	\$660,610	\$581,881	\$78,729
Printing.....	35,000	34,087	913
Sub-total.....	\$695,610	\$615,968	\$79,642
Salaries, State officers.....	25,200	24,000	1,200
Total.....	\$720,810	\$639,968	\$80,842

Receipts from all sources July 1, 1919, to June 30, 1921, \$707.80.

\* Not included in total.

\*\* Federal Social Hygiene not included in recapitulation.

## DIVISION OF COMMUNICABLE DISEASES.

JOHN J. MCSHANE, M. D., DR. P. H., *Chief.*

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There was a grand total of 183,457 cases of communicable diseases reported to the State Department of Public Health during the fiscal year 1920-1921. During this year the field men have been unusually busy responding to calls in different localities within their respective districts. It was impossible for the limited number of field men to give their attention to all the calls requesting their help. The reason for the unusual number of calls year after year is due in greater part to the lack of proper local health administration. One can easily understand this when one realizes that there are more than 2,752 health jurisdictions in Illinois and 1,600 of these are each under the direction of the local supervisor of a township and the remainder is made up, in round numbers, of 800 laymen and 400 physicians making a total of 2,400 laymen who are supposed to look after the health of the community they represent.

It is almost beyond belief that there are still some cities in Illinois today which have no accurate means of knowing the number of people who die each year, or the number of infants born, or whether such infants live or die, and if they die, the cause of death. This, of course, is due in part to improper registration.

It is an established fact that only through proper reporting of communicable diseases, and the proper reporting of deaths, births and marriages, that the control of communicable diseases and intensive health work can be well done in any community, for such numerical registration really forms an indispensable basis of public health work, and our chief source of such information is the practicing physician. Hence, the laxity on the part of physicians has a great deal to do with the non-control of communicable diseases. Take for instance tuberculosis and typhoid fever, where for the former there is only a modified quarantine and isolation and a modified type of quarantine in the latter, still how few cases are reported to the health department. In many cases the only reports we get from some communities are the original certificates of death. Therefore, how necessary is the cooperation of the practicing physicians. They can be of immeasurable value, or they can be an obstruction to the development and promotion of public health efficiency.

If local communities would only spend one-half the time and energy supervising scarlet fever, diphtheria, tuberculosis, summer diarrhoea, gonorrhoea and syphilis that they do looking after rubbish piles and other

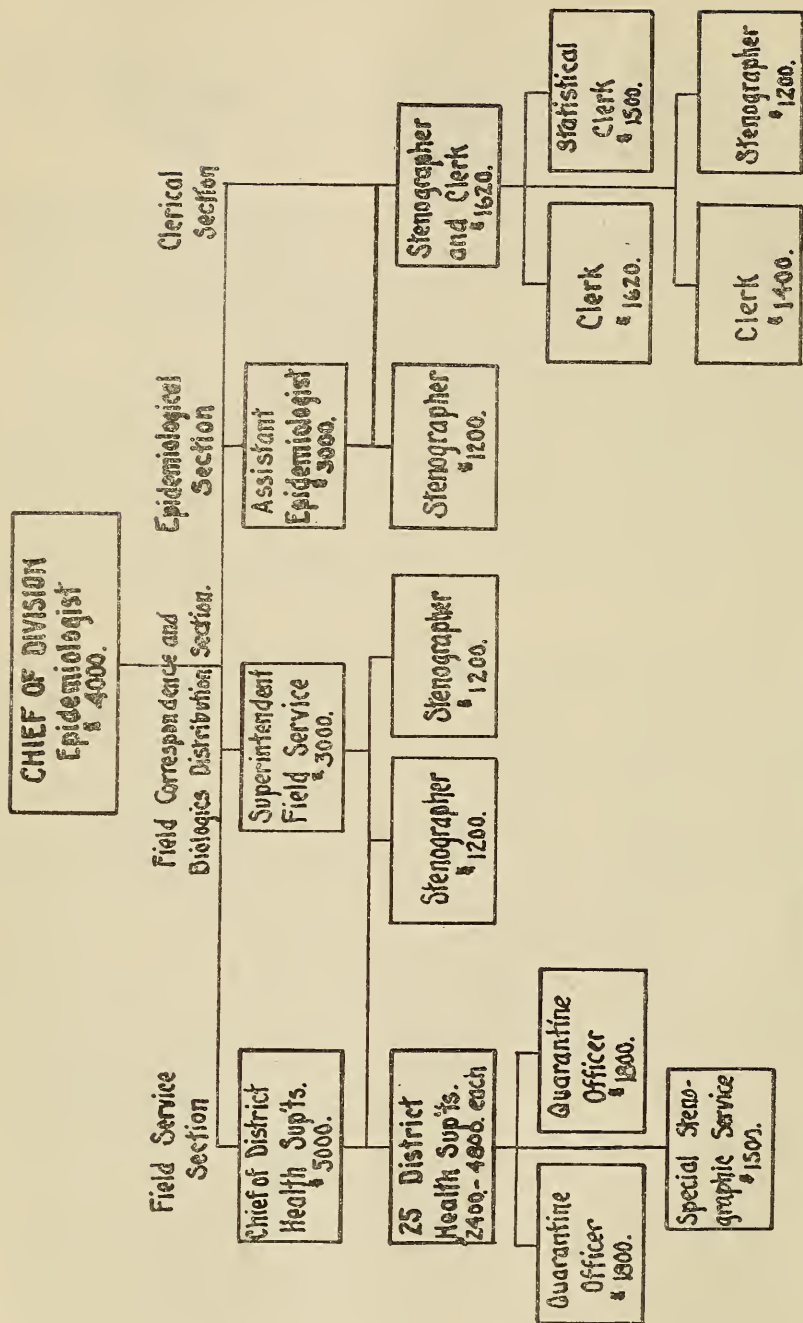


Figure III—Divisional Organization for Biennium, 1921-23.



nuisances—doing intensive work along these lines—more headway would be made in abolishing these diseases. I do not mean to say that rubbish piles and the like should not be taken care of, for we know that a clean city makes for higher ideals among its citizens, and when people have civic pride many things are accomplished that are not accomplished unless this is the case.

“Health has ever been recognized as the chief basis of wealth and happiness, and in this age is the subject of a science and administrative practice of its own.” Hence, we find the Statesman Disraeli affirming that “the conservation of public health is the first duty of the statesman.” It was thought in the past that only the weaklings suffered from infection or communicable diseases. If this were true, disease long ago would have taken such a toll that only those of physical perfection would be left, but we know this is not true for in our armies men who pass the most rigid examinations and are specimens of physical perfection succumb to pneumonia, meningitis and other communicable diseases.

As has been said modern public health recognizes that health means much more than the mere absence of disease, and under hygiene includes all measures taken to secure the best internal workings of the human frame to keep it at its best, thus eliminating the internal poisonings and the results of deprivations and excesses which produce certain diseases and disabilities. Public health recognizes further that surroundings, through direct action on the body, whether perfect or imperfect, may injure or destroy it, and under sanitation strives to provide surroundings which may eliminate external conditions leading to disease or injury.

The chief advance in public health of recent years is that which recognizes specifically the cause and effect, both in hygiene and sanitation, and meets each separate source or cause of each such trouble with a specific measure to prevent it. As has been said by Dr. H. W. Hill the old public health was concerned with the environment; the new is concerned with the individual. The old sought the sources of infectious diseases in the surroundings of the man; the new finds them in the man himself. The old sought the sources in every place except where they really are. The new seeks these sources and finds them in persons or animals carrying infection, whose dejecta or other discharges enter the body of other persons. The old public health was continually looking for the sources in bad smells, stagnant water, smoke, garbage, sewer gas, defective plumbing, old rubbish piles, and these in times gone by were supposed to be the starting point of epidemics.

More than once have I been told that the patient contracted typhoid fever from eating fruit or vegetables that had been stored in a damp cellar, or possibly from sewer gas, etc., and a case of scarlet fever came from some clothes that had not been fumigated months or years before; that malaria came from dampness.

The new public health today sees in the garbage pail and the manure pile a place for flies to breed, which carry infection if their bodies are contaminated with discharges from persons suffering from communicable diseases.

In swamps it sees a place for the malaria and yellow fever mosquito to breed, for we know that both malaria and yellow fever are transmitted by the bite of the mosquito.

In the past if there was only one employee in the health department he must be a sanitary inspector who condemned everything in sight and in most cases these were secondary in importance to the very things that should have been corrected. The average sanitary inspector will make great complaint and cry about garbage and the like not being properly cared for, yet pays no attention as to whether the milk man is delivering milk containing typhoid germs, or milk infected with scarlet fever; that often is his last thought, if he has one at all on the subject.

The modern trained public health official cares nothing, so far as the restriction of disease and death is concerned, for the dirty back yard or the damp cellar in themselves, but only in so far as these enter into the transmission of infected discharges. Then, at once, they become vitally important. The sanitary inspection of the modern sanitarian, so far as it relates to infection, begins and usually ends with a search for (a) the infected individual, (b) the routes of spread of infection from that individual, (c) the routes of spread of the ordinary excreta of ordinary uninfected individuals to the mouths of their ordinary associates in ordinary life.

Dr. H. W. Hill says the most important group of duties falling to the health authorities is that under the head of communicable diseases. I will use Rosenau's classification:

1. Diseases spread largely through secretions or discharges from the nose, throat and mouth.
2. Diseases spread largely through the excreta.
3. Diseases spread by insects and vermin.
4. Diseases having specific preventive measures.
5. Miscellaneous diseases.

As Dr. Hill says, infective or communicable diseases are infectious or communicable because they are due to the growth, in the body of minute animal or vegetable forms (germs), the transmissibility of these germs from body to body being the sole explanation of why diseases are catching.

Wherever germs develop in the body they leave it chiefly in the discharges or by routes of discharges such as the nose and throat, bladder or bowel, i. e., from the main orifices of the body. I might qualify this statement and say that smallpox, leprosy, syphilis and some forms of tuberculosis are transferred from skin lesions. Certain tropical diseases are transferred by insects tapping the blood stream.

The discharges infect practically any person, when that person takes the discharges in some form into the mouth or nose, except in trachoma and venereal diseases.

Modern public health recognizes therefore that most of the communicable diseases are derived directly from infected persons and not so much from infected things, except recently infected water, milk, food or flies.

The routes by which the discharges of the sick person pass to the well person are exactly those by which the same discharges pass from the well person to the well person in ordinary life. For nose and mouth discharges, the routes are mouth spray and sputum, conveyed through direct contact (as kissing, etc.). For bowel and bladder discharges the hands form the route. These become infected and in turn, either directly or indirectly, infect matter that finds its way to the mouth. Water supplies are peculiar because bowel and bladder discharges en-masse, in form of sewage, often enter them directly, at times being deliberately poured into them.

The relative importance of those various routes in the carriage of infection varies much. The amount and freshness of the discharges, the number and virulence of the germs which they contain, the size and frequency of the dose, and the number of susceptible persons who are dosed, must always be considered. Almost all the infectious disease germs die out quickly when exposed to direct sunlight, and fairly rapidly in diffused sunlight. Hence, as a rule, things succeed in conveying infection only somewhat directly from the infector to the infectee, and practically only during the limited period when the germs are still fresh and moist.

These new principles place at the head of official public health activities the search for, and the supervision of infected persons, and the control of infected discharges for the purpose of excluding them from the mouths and also from food and drink.

In Illinois we will never have proper health administration until we can cut down the 2,752 health jurisdictions into a workable number of districts with a full-time medical health officer and qualified assistant personnel to look after the preventive work in each.

In the last session of the legislature a full-time county health officer bill was offered by the department and passed by the Senate with only one dissenting vote but it unfortunately died in the committee of the House. Had this bill been passed it would have been a great stride toward giving all communities in the State proper health administration which they lack at the present time. The Director of the State Department of Public Health, knowing the need of a great many communities in the State, decided something must be done to prevent, in part, the needless waste of human lives and was successful in having appropriations made for twenty additional full-time district health superintendents. The State will be divided into districts. Each district will be served by a full-time district health superintendent who will give his

whole time to the work of supervising the public health work in his respective district.

TABLE 2—MORBIDITY AND MORTALITY FOR PREVENTABLE DISEASES REPORTED FOR PERIOD 1917-1921. (Fiscal years).

	1917-1918		1918-1919		1919-1920		1920-1921	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	1,963	581	1,199	462	2,293	386	1,787	370
Malaria.....	1,996	115	199	77	2,011	107	1,365	76
Smallpox.....	4,575	15	3,028	9	7,807	8	10,928	29
Measles.....	29,191	351	19,165	276	33,535	429	33,676	353
Scarlet fever.....	5,804	251	4,140	162	16,810	324	19,765	361
Whooping cough.....	14,306	708	7,214	424	13,275	444	16,165	549
Diphtheria.....	11,069	1,527	7,789	978	12,876	1,061	16,764	1,243
Influenza.....			284,142	22,207	170,954	5,661	3,056	597
Tuberculosis (all forms).....	19,703	8,402	15,909	7,820	18,286	6,741	13,265	5,594
Meningitis epidemic.....	531	240	171	92	272	95	193	63
Poliomyelitis.....	867	328	265	120	364	101	303	66
Pneumonia.....	5,458	8,277	20,097	13,626	18,276	8,118	8,976	4,948

#### TYPHOID FEVER.

During the fiscal year there were reported 1,787 cases of typhoid fever as compared with 2,293 for 1919-1920; 1,199 for 1918-1919 and 1,963 for 1917-1918. For the year 1920-1921 there were reported 370 deaths from this disease against 386 for 1919-1920; 462 for 1918-1919 and 581 for 1917-1918. As will be noted from the number of deaths compared with the number of cases for the different years, all typhoid fever cases were not reported. It is indeed gratifying to note the reduction in deaths from typhoid fever during the past four years; each year there being a decrease from the previous one. During the year the district health officers in their typhoid investigations discovered a number of carriers.

Three rather severe epidemics of typhoid fever occurred during July, August and September of the last fiscal year. The first, which resulted in about seventy-five cases and a number of deaths, occurred at Fountain Green. This epidemic dates, it appears, from a church ice cream supper which was held July 2. On this occasion ice cream was served from four different freezers, one of which contained chocolate ice cream. All persons subsequently developing a continued fever resembling typhoid fever or paratyphoid fever symptomatically, ate of the chocolate ice cream while none of those partaking exclusively of the plain cream became ill. All other probable sources of infection were excluded because of the lack of anything in common to all patients. Later investigation showed that there was a carrier among the personnel of the dairy supplying the milk used in making the chocolate ice cream. Circumstantially this carrier appears to have been the source of infection. It is unfortunate, however, that more complete work could not have been done by the field worker and the laboratory since it appears that there



may have been a double source of infection, possibly not suspected at the time of investigation.

The second epidemic of typhoid fever referred to occurred at Tuscola. The outstanding fact in this epidemic was the large proportion of secondary cases, there having been about three secondary cases to each primary one. The investigator reported that the town of Tuscola and the surrounding country is low-lying territory with sanitary conditions very bad. He further stated that this community had an outbreak of typhoid fever, consisting of some 130 cases, four years before, and that a few cases had occurred each summer since the time of that epidemic. It was concluded after careful investigation that multiple well infection, probably emanating from carriers of typhoid bacillus, was responsible for the primary cases in this epidemic, the secondary cases being due to the lack of proper care of the patients and the disposal of their excreta.

The third epidemic occurred in White County during July with about sixty cases of typhoid fever, of which about fifteen cases were reported from Carmi. Investigation proved that the outbreak was water-borne.

In the spring of 1921 typhoid fever occurred in Charleston and the cases were traced to a carrier.

TYPHOID FEVER (Calendar years).

	1916	1917	1918	1919	1920
January.....	210	108	55	33	124
February.....	310	180	89	33	80
March.....	319	110	82	39	88
April.....	118	211	55	47	115
May.....	219	93	52	32	103
June.....	238	68	51	64	138
July.....	327	186	212	265	162
August.....	577	405	241	294	211
September.....	547	637	286	306	284
October.....	413	193	102	346	257
November.....	374	193	24	251	193
December.....	139	94	86	183	109
Total.....	3,791	2,478	1,335	1,893	1,869

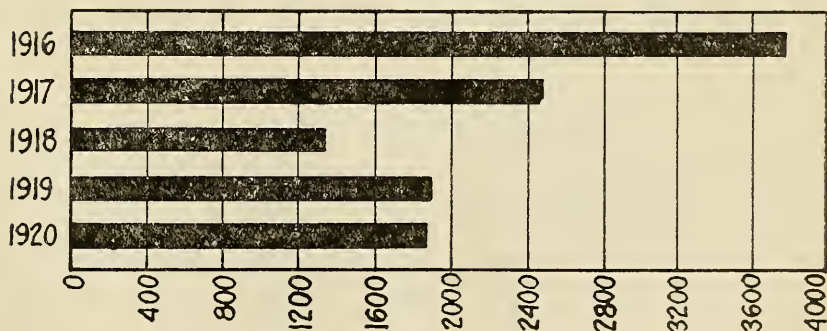


Figure IV—Reported Cases of Typhoid Fever.

TYPHOID FEVER.  
(Morbidity, Mortality and Fatality Rates.)

Fiscal year.	Population.	Cases.	Deaths.	Morbidity rate (per 100,000).	Mortality rate (per 100,000).	U. S. Mortality.	Fatality rate (percent reported cases).
1917-18.....	6,310,856	1,963	581	33.1	9.2	12.5	27.7
1918-19.....	6,398,068	1,199	462	18.7	7.1	9.2	38.1
1919-20.....	6,485,280	2,293	386	35.3	5.9	7.8	16.8
1920-21.....	6,572,492	1,787	370	27.1	5.6	-----	20.7

MALARIA.

In checking over the morbidity reports for the past four years we note that in 1920-1921 there were 1,365 cases of malaria reported with 76 deaths; 2,011 cases reported for 1919-1920 with 107 deaths; 199 cases for 1918-1919 with 77 deaths and 1,996 cases for 1917-1918 with 115 deaths.

It has been found that the mortality rate if compared with the case rate is about one to every three hundred. In figuring a ratio of cases as per death reports it will be noted that for the year 1920-1921 there should have been reported 22,800 cases; for 1919-1920, 32,100 cases; for 1918-1919, 22,100 cases; and for 1917-1918, 44,500 cases.

In checking over the mortality rate from the different counties in Illinois it is found that seventy deaths from malaria occurred in a small group of counties in southern Illinois. From the above statistics it will be readily seen that southern Illinois has entirely too many cases of malaria and only a very small proportion of the cases are reported.

The counties reporting the largest number of cases are as follows: Bureau, 70; Clay, 18; Clinton, 139; Jackson, 29; Franklin, 118; Gallatin, 17; Hardin, 13; McLean, 78; Pike, 66; Pulaski, 70; Saline, 59; Williamson, 64; Union, 186.

SMALLPOX.

During the past year there were reported to the Illinois Department of Public Health 10,928 cases of smallpox, the largest number that has ever been reported in one year in this State. It is surely a sad commentary on local public health administration in this great State of ours when smallpox is prevalent in such proportions as has been noted above.

The above number of reported cases does not represent the actual number of cases that occurred during the year, as subsequent cases occurring after the original cases on the premises many times are not reported. Smallpox will continue to occur until such time as the people of Illinois awaken and realize that to be protected against smallpox one must be successfully vaccinated. If all the children were vaccinated at the beginning of their school life it would only be a short time until smallpox would be wiped out of our State. One can easily understand how smallpox can get a foothold in a community when in many com-

munities less than 10 per cent of the population is protected by vaccination.

During the past year the district health officers investigated over one hundred and two outbreaks of smallpox. The largest outbreaks occurred in the following named places. The figures indicate the number of cases reported in each case: East St. Louis, 503; Streator, 80; Ottawa, 106; Freeport, 129; Plainfield, 50; Cooksville, 34; Moline, 72; Rock Island, 102; Rockford, 521; Jackson County 402, of which 107 were reported from Murphysboro; McLean County 410, of which Bloomington had 158 and Williamson County 619.

SMALLPOX.  
(Calendar years.)

	1916	1917	1918	1919	1920
January.....	306	490	742	322	776
February.....	395	715	744	284	842
March.....	521	499	645	465	748
April.....	416	653	557	567	1,063
May.....	402	826	571	554	1,232
June.....	241	401	189	442	909
July.....	123	312	103	183	383
August.....	15	114	73	135	212
September.....	32	146	26	232	198
October.....	196	168	42	260	326
November.....	339	93	36	648	553
December.....	399	292	114	779	1,294
Total.....	3,385	4,709	3,842	4,871	8,536

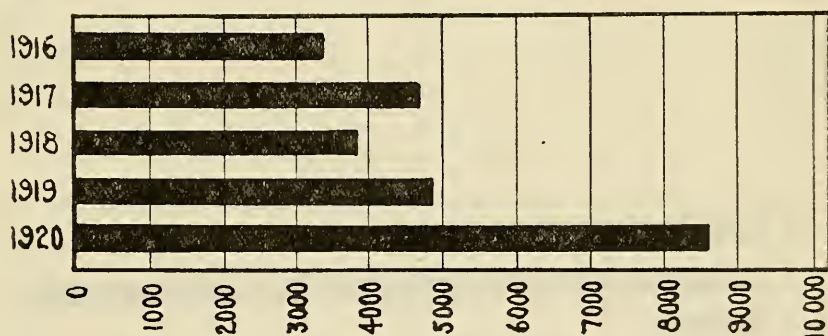


Figure V—Reported Cases of Smallpox.

SMALLPOX.  
(Morbidity, mortality and fatality rates.)

Fiscal years.	Population.	Cases.	Deaths.	Morbidity rate (per 100,000).	Mortality rate (per 100,000).	Fatality rate (percent reported cases).
1917-18.....	6,310,856	4,575	15	72.4	0.2	0.3
1918-19.....	6,398,068	3,028	9	47.3	0.1	0.2
1919-20.....	6,485,280	7,807	8	120.3	0.1	0.1
1920-21.....	6,572,492	10,928	29	166.2	0.4	0.9

## MEASLES.

For the fiscal year ending June 30, 1921, there were reported to this department 33,676 cases of measles against 33,535 for 1919-1920; 19,165 for 1918-1919; 29,191 for 1917-1918 and 49,945 for 1916-1917. The deaths for the same period were as follows: 353, 1920-1921; 429, 1919-1920; 276, 1918-1919, and 351, 1917-1918.

During the past five years the greatest number of cases occurred during 1916-1917 when 49,945 cases were reported. The year 1920-1921 ranks second with 33,676 reported cases. Owing to the fact that in many cases of measles no physician is in attendance and hence the case is not reported, these figures do not represent the actual number of cases occurring.

Possibly the largest epidemics of measles during the year were as follows: Bloomington with 765 reported cases; Elgin reporting 840 cases, and Quincy reporting 484 cases.

MEASLES.  
(Calendar years).

	1916	1917	1918	1919	1920
January.....	1,556	4,634	1,150	711	4,366
February.....	2,943	6,464	939	1,072	4,610
March.....	6,403	10,740	1,237	2,453	4,982
April.....	6,246	10,334	1,278	5,754	5,343
May.....	5,393	10,140	1,501	5,204	5,542
June.....	3,176	4,505	641	3,142	4,434
July.....	1,403	1,331	273	753	1,573
August.....	355	312	121	153	542
September.....	194	189	56	101	233
October.....	345	122	141	270	510
November.....	969	389	67	536	1,280
December.....	2,353	417	171	757	1,985
Total.....	31,336	49,577	7,575	20,906	35,400

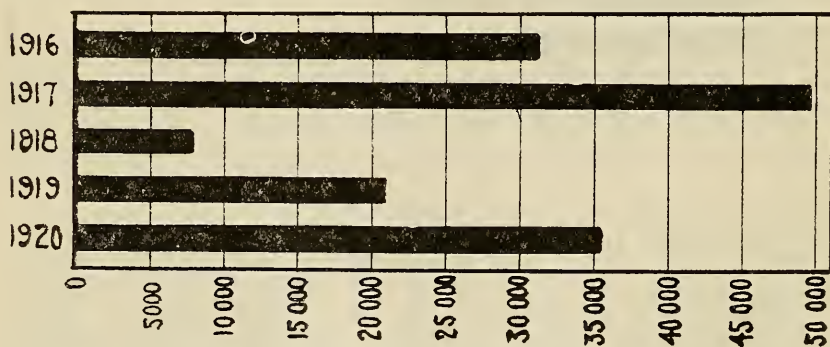


Figure VI—Reported Cases of Measles.



MEASLES.  
(Morbidity, mortality and fatality rates.)

Fiscal years.	Population.	Cases.	Deaths.	Morbidity rate (per 100,000).	Mortality rate (per 100,000).	U. S. mortality rate.	Fatality rate (percent reported cases).
1917-18.....	6,310,856	29,191	351	462.5	5.5	10.8	3.6
1918-19.....	6,398,068	19,165	276	299.5	4.4	3.9	1.4
1919-20.....	6,485,280	33,535	429	517.1	6.6	8.8	1.3
1920-21.....	6,572,492	33,676	353	512.4	5.5	-----	1.0

SCARLET FEVER.

A total number of 19,765 cases of scarlet fever was reported with 361 deaths for 1920-1921; 16,810 cases with 324 deaths for 1919-1920; 4,140 cases with 162 deaths for 1918-1919; 5,804 cases with 251 deaths for 1917-1918, and 27,534 cases for 1916-1917. Commencing with the opening of the public schools in September, 1920, there was an unusually rapid increase in the number of cases, ranging from 715 cases in September to the highest point of 3,116 cases in January. Many of the cases were quite mild and as a result the physicians were not called and many cases were not reported.

During the year there were a number of large outbreaks of which the largest was in Springfield, during the winter and spring of 1921. There were 1,040 cases reported, the majority of which were of a mild type.

Scarlet fever was epidemic in Galva for a number of months, the most severe outbreak occurring during the months of April, May and June when 86 cases were reported.

SCARLET FEVER.  
(Calendar years.)

	1916	1917	1918	1919	1920
January.....	1,878	2,284	758	440	2,449
February.....	1,891	2,625	611	588	2,235
March.....	2,281	3,403	561	662	2,335
April.....	1,564	2,488	505	586	1,708
May.....	1,547	2,230	362	495	1,456
June.....	893	1,329	148	289	862
July.....	416	699	150	99	429
August.....	239	351	101	97	293
September.....	488	528	231	304	715
October.....	933	401	189	656	1,385
November.....	1,264	232	201	893	1,972
December.....	1,682	648	208	1,101	2,637
Total.....	15,076	17,220	4,025	6,210	18,476

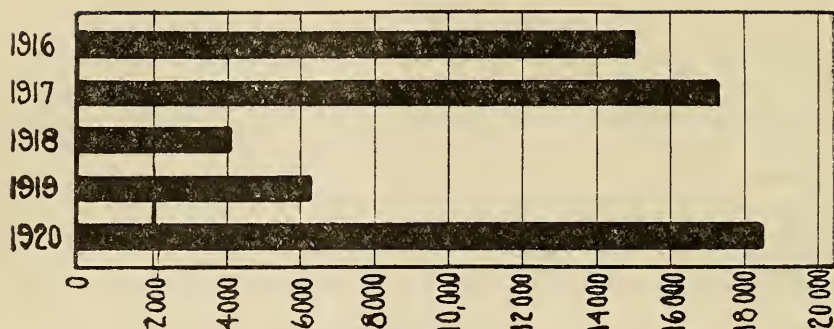


Figure VII—Reported Cases of Scarlet Fever.

SCARLET FEVER.  
(Morbidity, mortality and fatality rates.)

Fiscal years.	Population.	Cases.	Deaths.	Morbidity rate (per 100,000).	Mortality rate (per 100,000).	U. S. mortality rate.	Fatality rate (per cent reported cases).
1917-18.....	6,310,856	5,804	251	91.4	3.9	3.0	4.3
1918-19.....	6,398,068	4,140	162	64.7	2.5	2.8	3.9
1919-20.....	6,485,280	16,810	324	259.2	4.9	4.6	1.9
1920-21.....	6,572,492	19,765	361	300.7	5.5	-----	1.8

WHOOPIING COUGH.

There were reported during the year 1920-1921, 16,165 cases of whooping cough with 549 deaths; for 1919-1920 there were reported 13,275 cases with 444 deaths; for 1918-1919, 7,214 cases and 424 deaths; and for 1917-1918, 14,306 cases with 708 deaths.

We do not get complete reports in either whooping cough or measles. It will be noted from the foregoing statement that whooping cough is of major importance because of the complications which follow this disease. More deaths occur from whooping cough than from typhoid fever, poliomyelitis, and epidemic meningitis. The highest mortality was reached in 1917-1918 when there occurred 708 deaths. Unfortunately, it is considered one of the so-called minor diseases of childhood by the laity.

DIPHTHERIA.

During the year 1920-1921 there were reported to the State Department of Public Health 16,764 cases of diphtheria with 1,243 deaths. For the year 1919-1920 there were reported 12,876 cases and 1,061 deaths; in 1918-1919, 7,789 cases and 978 deaths; for 1917-1918, 11,069 cases and 1,527 deaths; and for the year 1916-1917, 13,716 cases.

During the past four fiscal years the average number of deaths per year was about 1,200, the morbidity averaging about ten times as great as the mortality. During the pre-antitoxin days the mortality ran 40

per cent of the cases, but with the introduction of antitoxin it has been reduced to about 10 per cent. It seems like this is an unusually large number of deaths when one considers that we have at our disposal diphtheria antitoxin which, if given within the first 24 hours of the disease, would cure nearly every case. It is true, however, that the number of deaths for the past few years have remained more or less constant. The greatest mortality and morbidity in diphtheria is between the ages of one and five years. Over 80 per cent of the deaths occur under five years of age. Where the cause of death has been analyzed it has been found that in a great many of the cases the death was due to the non-recognition of cases and the lack of early treatment. In view of the above fact that the mortality has remained constant for a number of years it would seem that the control of diphtheria will have to be met by other means than have been used in the past.

At Mooseheart, in Illinois, more than a thousand children were immunized with toxin-antitoxin and only one case of diphtheria was reported among those immunized during the past two years. It is claimed that the active immunity produced by toxin-antitoxin lasts about five years. It is most important that children under five years be immunized with toxin-antitoxin on account of the high morbidity and mortality of children in this age group. If we can immunize 95 per cent of our children for five years by giving them toxin-antitoxin we can reduce the mortality from 60 to 80 per cent. As soon as diphtheria is clinically diagnosed antitoxin should be given without waiting for a laboratory result of nose and throat cultures.

DIPHTHERIA.  
(Calendar years.)

	1916	1917	1918	1919	1920
January.....	973	1,263	1,028	750	878
February.....	810	1,072	649	687	693
March.....	736	1,312	751	688	850
April.....	559	1,124	665	644	787
May.....	640	1,141	565	668	761
June.....	643	930	566	470	662
July.....	471	890	487	485	600
August.....	525	722	362	397	520
September.....	797	1,212	604	751	908
October.....	1,564	814	990	1,589	1,913
November.....	1,627	2,046	703	1,628	2,544
December.....	1,337	1,161	705	1,207	2,261
Total.....	10,682	13,687	8,075	9,964	13,377

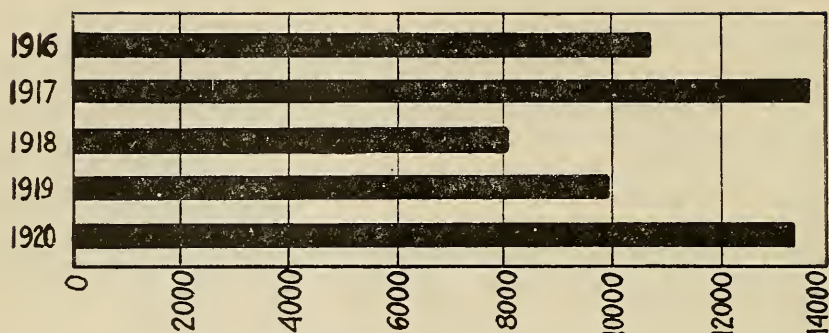


Figure VIII—Reported Cases of Diphtheria.

## DIPHTHERIA.

(Morbidity, mortality and fatality rates.)

Fiscal years.	Population.	Cases.	Deaths.	Morbidity rate (per 100,000).	Mortality rate (per 100,000).	U. S. mortality rate.	Fatality rate (per cent reported cases.)
1917-18 .....	6,310,856	11,069.	1,527	175.4	24.1	8.6	13.7
1918-19 .....	6,398,068	7,789	978	121.2	15.2	7.5	12.6
1919-20 .....	6,485,280	12,876	1,061	198.5	16.3	15.3	8.2
1920-21 .....	6,572,492	16,764	1,243	255.1	18.8	-----	7.4

## INFLUENZA.

During the fiscal year of 1920-1921, there were reported to the State Department of Public Health 3,056 cases of influenza with 597 deaths. The largest number of cases to be reported in one month was 520 for December. The smallest numbers were 55 for July, 1920, and 63 for June, 1921. The average number of cases per month was approximately 253 cases. The following tables show the marked decreases following the pandemic of 1918-1920.

## INFLUENZA.

(Fiscal years.)

	1918-1919	1919-1920	1920-1921
July .....		272	55
August .....		384	124
September .....	541	562	163
October .....	145,067	723	217
November .....	40,806	549	283
December .....	43,304	711	520
January .....	28,354	80,020	480
February .....	13,369	80,946	424
March .....	10,486	5,731	293
April .....	2,029	741	309
May .....	166	159	125
June .....	20	156	63
Total .....	284,142	170,954	3,056



## RABIES.

During the past year there were reported nine cases of rabies with one death, as compared with fourteen cases with three deaths for 1919-1920.

## TUBERCULOSIS.

In checking over our morbidity reports of tuberculosis we note that there were reported for the fiscal year 1916-1917, 11,106 cases; for 1917-1918, 19,703 cases with 8,402 deaths; for 1918-1919, 15,909 cases with 7,820 deaths; for 1919-1920, 18,286 cases with 6,741 deaths; and for 1920-1921, 13,265 cases with 5,594 deaths.

## EPIDEMIC MENINGITIS.

During the fiscal year ending June 30, 1921, there were reported to this division 193 cases of epidemic meningitis with 63 deaths; during 1919-1920, 272 cases with 95 deaths; for 1918-1919, 171 cases with 92 deaths; and for 1917-1918, 531 cases with 240 deaths.

## POLIOMYELITIS.

Within the fiscal year there were reported 303 cases of poliomyelitis with 66 deaths, being a decrease of cases and deaths as compared with the year 1919-1920, when there were 364 cases and 101 deaths. In 1918-1919, 265 cases with 120 deaths were reported, and in 1917-1918, 867 cases with 328 deaths.

POLIOMYELITIS  
(Calendar years.)

	1916	1917	1918	1919	1920
January.....		9	10	9	3
February.....		13	4	3	5
March.....		12	17	7	9
April.....		17	21	4	7
May.....	4	6	18	13	6
June.....	22	12	16	12	12
July.....	137	27	43	77	9
August.....	295	128	73	101	35
September.....	222	373	79	70	80
October.....	85	213	18	28	66
November.....	23	39	2	29	42
December.....	10	9	2	17	15
Total.....	798	858	303	370	292

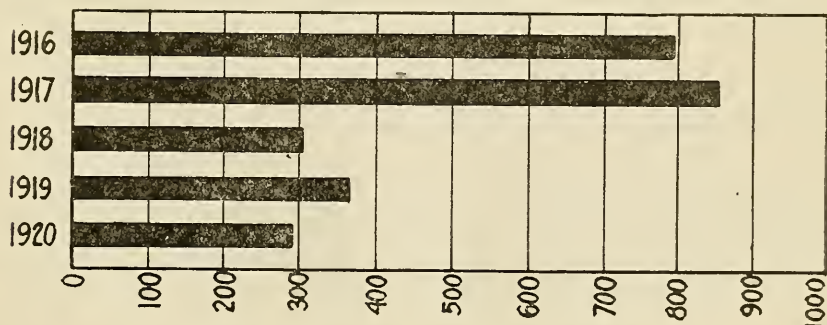


Figure IX—Reported Cases of Poliomyelitis.

POLIOMYELITIS.  
(Morbidity, mortality and fatality rates.)

Fiscal years.	Population.	Cases.	Deaths.	Morbidity rate (per 100,000).	Mortality rate (per 100,000).	Fatality rate (per cent reported cases).
1917-18.....	6,310,856	867	328	13.8	5.3	38.6
1918-19.....	6,398,068	265	120	4.1	1.8	44.5
1919-20.....	6,485,280	364	101	5.6	1.5	27.7
1920-21.....	6,572,492	303	66	4.6	1.0	21.7

PNEUMONIA.

During the past year there were reported 8,976 cases of pneumonia with 4,948 deaths. The year previous, 1919-1920, there were 18,276 cases with 8,118 deaths; during 1918-1919, 20,097 cases with 13,626 deaths; and for the year 1917-1918, there were 5,458 cases with 8,277 deaths.

During the past four years the greatest number of cases of pneumonia was, of course, reported during the years when influenza was epidemic. During those years an average of 20,000 cases of pneumonia were reported against a normal year of some 9,000 cases. Of course, 9,000 does not nearly represent the actual number of cases that occur in Illinois. Deaths from pneumonia average over 8,000 each year in this State. It seems that the people do not realize the seriousness of this disease as a menace to health and its infectious nature. This disease ranks with tuberculosis as one of the principal causes of death. In one or two years it outranked tuberculosis as the cause. The number of cases of tuberculosis in comparison with the morbidity and the mortality for both diseases will be found in the tables following:

MORBIDITY TABLE.  
(Fiscal years.)

	1917-1918	1918-1919	1919-1920	1920-1921
Tuberculosis.....	19,703	15,909	18,286	13,265
Pneumonia.....	5,458	20,097	18,276	8,976

MORTALITY TABLE.  
(Fiscal years.)

	1917-1918	1918-1919	1919-1920	1920-1921
Tuberculosis.....	8,402	7,820	6,741	5,594
Pneumonia.....	8,277	13,626	8,118	4,948

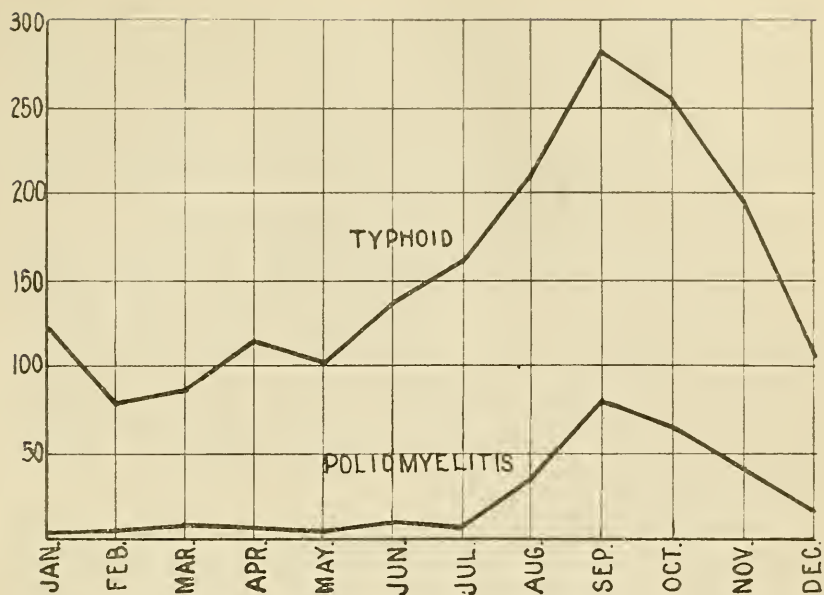


Figure X—Seasonal prevalence of diseases indicated for calendar year 1920.

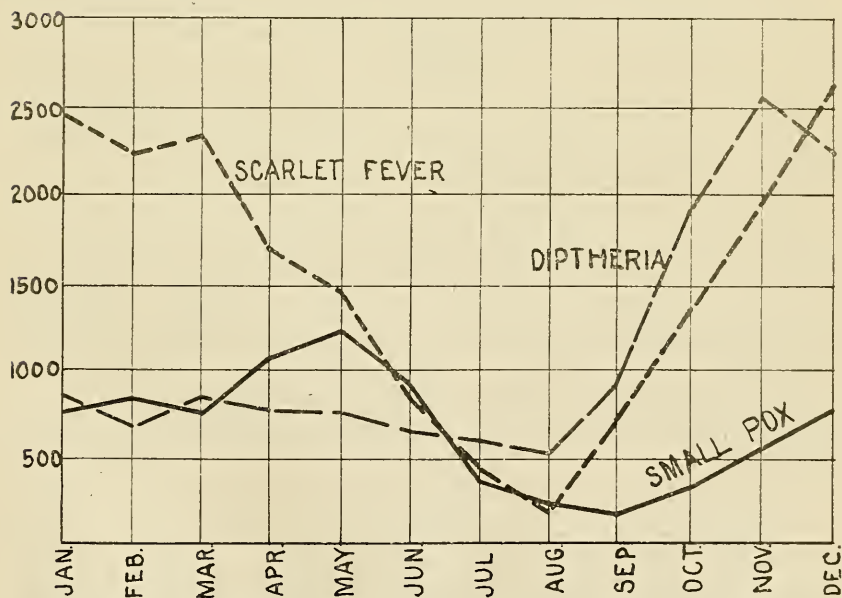


Figure XI—Seasonal prevalence of diseases indicated for calendar year 1920.

## ENCEPHALITIS LETHARGICA.

This disease has been reported from all parts of the world. It was reported in Austria in the beginning of 1917; in England and France in the spring of 1918; in Italy during the following winter; in Portugal in February of 1919; in India in November, 1919; in Spain during the early part of 1920; and in the United States it appeared in the latter part of the year of 1918 in the states bordering on the Atlantic Ocean and the following October it occurred on the Pacific coast.

During the year 1920 there was reported first in Chicago a number of cases diagnosed as encephalitis lethargica, or so-called sleeping sickness. Shortly after these cases were recognized and physicians' attention called to the fact that certain clinical symptoms were indicative of encephalitis, the State Department of Health was called upon to confirm the diagnosis of encephalitis lethargica. During the year 1920 there were reported to this department in the first six months 237 cases and during the last six months seven cases. In 1921, 200 cases were reported for the first six months of the year.

When this disease first made its appearance in Illinois the State Department of Public Health promulgated a special order making cases of this disease reportable to local health authorities and subject to isolation, and further providing:

The cases and nursing attendant must be isolated. If isolation is efficient and other inmates of premises do not come in contact with the patient or attendant or with articles coming from the sick room, such other inmates may leave the premises to attend to necessary business affairs. Isolation shall continue until such time as convalescence is established and can be terminated only by local health authorities. Premises should be placarded.

## LEPROSY.

During the past year there were reported to the State Department of Public Health two cases of leprosy. The first case was a Greek, a resident of East Moline, who worked in the shops in Silvis.

The second case was reported in a man, 30 years of age, whose regular occupation was that of a dry goods salesman. He came to this country in 1912 and has been living in Chicago ever since, with the exception of the first six months of 1918, during which time he was employed as a shipping clerk in Dallas, Texas. In 1918, he entered the United States Army and served in France. He was discharged "in good health" May 28, 1919, from an engineers' company. Apparently the onset of his disease was about November, 1916. He has done no work since December, 1920. At the present time he is isolated at Cook County Hospital.

## PELLAGRA.

During the year there were reported to this division thirteen cases of pellagra. Five of these cases occurred in Cook County; two were reported from the Dixon State School and Colony; two from the Alton State Hospital; two from the Kankakee State Hospital; one from the



Peoria State Hospital at Bartonville; and one from Goreville, Johnson County. No doubt there were other cases in the State that were not reported.

#### ANTHRAX.

Seven cases of anthrax were reported during this period of one year: one in each of the months of August, September and December, 1920, and two in each of the months of January and February, 1921. This is primarily a disease of animals and more particularly of cattle and sheep but does occasionally occur among those who work among these animals or handle hides or wools.

An investigation of the source of cases of anthrax occurring in August and September showed that the use of infected shaving brushes was responsible for these cases. All of the infected brushes belonged to one lot and were of cheap grade, made of horse hair, in imitation of "Badger" and none bore either the manufacturer's name or trade mark.

The prompt destruction of all shaving brushes sent out from this source of infection to various parts of the country undoubtedly resulted in the prevention of other cases of anthrax. The good achieved as the result of a thorough investigation of the source of infection of these cases illustrates quite well the protection which the public receives as the result of the scientific application of our knowledge regarding the cause and means of transmission of communicable diseases.

#### MILK SICKNESS.

Several cases of another rather uncommon disease in man in Illinois known as "milk sickness" were investigated by one of the district health officers. It appears from his report that some twenty cases of this disease had occurred in Grundy County since 1916, with one death in 1920 attributed to this disease. Other cases are known to have occurred in this same locality prior to 1916 according to another investigator detailed there by the former State Board of Health.

A number of "endemic foci" were reported in Grundy County. The disease is said to follow dry weather when cattle pasture in wooded places and always occurs in the fall of the year. The symptoms are fairly constant and consist of progressive weakness, various stomach and bowel symptoms, subnormal temperature, slow pulse and coma at times.

In order to prevent the occurrence of this disease it is recommended that the low wooded lands where the cows have access to noxious weeds be cleared of timber. This seems reasonable since the growth of weeds, thought to be responsible for the condition of milk which causes this disease in persons who drink it, is favored by shade and dampness.

#### TRACHOMA.

As a result of a conference called in March, 1920, by the Trachoma Committee of the Illinois Society for the Prevention of Blindness at which the Board of Welfare Commissioners of the Department of Public

Welfare was represented, it was agreed that an intensive survey of the prevalence of this disease should be made in a small area selected in southern Illinois, and that a treatment clinic should also be established. In addition to the two organizations mentioned, the Eye Department of the University of Illinois, the American Red Cross and the State Department of Public Health cooperated in the planning for and actual conduct of this work during the months of May, June and July. The main clinic was held at Mt. Vernon with plans for branch consultation clinics at Harrisburg and Benton. The following is a brief report of the medical director, Dr. E. V. L. Brown, for the first three months' work of the clinics:

MT. VERNON—MAY 10 TO JULY 26, 1920.

Attendance—first day .....	17
Total attendance .....	515
Trachoma patients .....	33

HARRISBURG—JUNE 29, JULY 7 and 21, 1921.

Attendance—first day .....	58
Total attendance .....	114
Trachoma patients—39 per cent. ....	45

BENTON—JULY 23, 1920.

Attendance .....	85
Trachoma patients—29 per cent. ....	12
Seen by doctor. ....	42
Referred to next clinic. ....	43

Mt. Vernon is a treatment clinic; does not therefore refer all cases for attention of local physicians.

Harrisburg and Benton are consultation clinics and refer all cases to attention of local physicians in consultation with clinic physician, and keep in touch with patients until they are under satisfactory care.

ANALYSIS OF DISPOSITION OF CASES IN HARRISBURG AND BENTON CLINICS.

	Harrisburg.	Benton.	Total.
Advised treatment .....	63	15	78
Advised refraction .....	22	14	36
Advised further study .....	2	3	5
Advised no treatment .....	7	5	12
Advised hospital care .....	1	1	*1
Referred to doctor (without examination) ..	7	—	7
Advised change of work .....	—	1	1
Advised operative treatment—			
Cataract .....	3	1	4
Trachoma .....	2	—	2
Pterygium .....	2	—	2
Enucleation .....	*1	2	3
Return for observation .....	—	1	*1
	115	43	158

\* Referred to doctor also.

OCCUPATIONAL DISEASE.

The Occupational Disease Act is "An Act to promote the public health by protecting certain employees in this State from the dangers of occupational diseases, and providing for the enforcement thereof."

149. *Physical Examinations, Reports.*

Sec. 4. It is hereby made the duty of any licensed physician who shall make the physical examination of employees under the provisions of section 2 of this act, to make an immediate report thereof to the State Department of Health of the State of Illinois upon blanks to be furnished by said department upon request, and if no such disease or illness is found the physician shall so report, and if any such disease is found, the report shall state the name, address, sex and age of such employee and the name of such employer, and the nature of the disease or illness with which the employee is afflicted, and the probable extent and duration thereof, and the last place of employment: *Provided*, that the failure of any such physician to receive the blanks of the State Department of Health for the making of such report, shall not excuse such physician from making the report as herein provided.

150. *State Department of Health, Director's Duty.*

The Director of the State Department of Health shall, immediately upon receipt of any report from any physician in accordance with the provisions of section 4 of this act, transmit a copy thereof to the Illinois Department of Factory Inspection.

There are 311 firms reporting monthly the number of men examined and the diseases found. During the fiscal year 84,712 men were examined for occupational diseases and 140 cases of lead poisoning, one case of arsenic poisoning and one case of carbon monoxide poisoning were reported to this division.

## THE COST OF COMMUNICABLE DISEASES.

In the past three annual reports tables were published showing the cost of communicable diseases in the different counties in the State, in which some interesting figures present themselves. The highest cost per capita, for 1920-1921, was in Union County with \$52.71 and the lowest was in Monroe County where communicable diseases cost \$5.98 per capita for the year.

In computing the cost of communicable disease, the following definite factors were taken into consideration and in every instance it is believed that the figures employed result in an under-statement rather than an exaggeration of the facts; cost of human life, computed at \$3,000 for the adult and \$500 for the child; cost of burial for the adult, \$100 and \$50 for the child; estimate of the number of cases of illness for each death from disease, prepared upon recognized epidemiological standards; the cost for medicine and nursing for the sick and the value of the loss of time from productive or gainful occupation. In these compilations, each disease was given careful and separate consideration and it is believed that the resultant figures state the case as clearly and accurately as it can be stated.

The total cost of communicable diseases for the year amounted to \$103,933,543, or a cost per capita of \$15.81 for every person in the State of Illinois. In 1919-1920, the total cost was \$150,070,738 and in 1918-1919, \$223,634,515. The largest reduction in cost is found in tuberculosis, pneumonia and influenza. Tuberculosis again ranks first with a grand total of \$72,207,900 for 1920-1921, and \$90,002,500 for 1919-1920. Pneumonia for 1920-1921 was \$18,140,755 and for 1919-1920, \$28,436,953. For the year 1920-1921 the cost of influenza was \$1,913,094 and for the year before \$18,895,551.

## DISTRIBUTION OF DIPHTHERIA ANTITOXIN.

During the fiscal year just passed, the following quantities of diphtheria antitoxin were distributed:

22,539	1,000	unit packages, chiefly for preventive use.
2,445	3,000	unit packages, for individual curative use.
16,564	5,000	unit packages, for individual curative use.
16,586	10,000	unit packages, for individual curative use.
1,197	10,000	unit packages, for institutional use.
1,078	20,000	unit packages, for institutional use.

60,409 packages or 412,084,000 units.

Of 19,670 cases of diphtheria in Illinois in which reports on the administration of State antitoxin were received by the department during the past 18 months, 1,136, or 5.67 per cent died. The period in which these cases occurred, however, includes the fall of 1920 when the death rate from diphtheria was unusually small.

Of the 1,136 fatal cases, 358 were reported as of the laryngeal type. This probably is under estimated as in many instances the physicians did not report the type of disease. In 332 cases resulting fatally the day of the membrane on which antitoxin was first administered was not indicated; in 110 cases antitoxin was reported as administered on the first day of the membrane; in 180 cases on the second day; in 184 cases on the third day; in 167 cases on the fourth day; in 83 cases on the fifth day; in 45 cases on the sixth day; in 27 cases on the seventh day; in 4 cases on the eighth day; in 3 cases on the ninth day; and 1 on the tenth day.

Complications in fatal cases were reported as follows: Adenitis in 8 cases; arthritis in 1 case; broncho pneumonia in 24; endocarditis in 14; gastro enteritis in 5; influenza in 10; malnutrition in 4; measles in 8; mumps in 8; myocarditis in 36; nephritis in 51; neuritis in 9; oedema of larynx in 4; oedema of glottis in 6; post diphtheric paralysis in 22 (paralysis of larynx 7, paralysis of palate 2, paralysis of pharynx 6); pneumonia in 15; scarlet fever in 68; uremia in 13; and whooping cough in 9.

The ages of the fatal cases were as follows: Not stated, 10 cases; 1 year old, 59; 2 years, 87; 3 years, 103; 4 years, 127; 5 years, 96; 6 years, 95; 7 years, 102; 8 years, 74; 9 years, 58; 10 years, 44; 11 years, 30; 12 years, 26; 13 years, 24; 14 years, 21; 15 years, 23; 16 years, 17; 17 years, 18; 18 years, 20; 19 years, 16; 20 years, 15; 21 years, 9; 22 years, 7; 23 years, 6; 24 years, 6; 25 years, 11; 27 years, 6; 28 years, 4; 29 years, 5; 30 years, 9; 31 years, 3; 32 years, 1; 33 years, 4; 34 years, 1; 35 years, 3; 37 years, 1; 40 years, 3; 42 years, 1; 45 years, 1.

The ages of the non-fatal cases were as follows: Not stated, 441 cases; 1 year old, 392; 2 years, 825; 3 years, 1,113; 4 years, 1,170; 5 years, 1,259; 6 years, 1,367; 7 years, 1,435; 8 years, 1,082; 9 years, 984; 10 years, 1,111; 11 years, 873; 12 years, 717; 13 years, 475; 14 years, 377; 15 years, 375; 16 years, 434; 17 years, 421; 18 years, 313; 19 years, 300; 20 years, 302; 21 years, 255; 22 years, 225; 23 years, 220;



24 years, 192; 25 years, 259; 26 years, 217; 27 years, 246; 28 years, 133; 29 years, 287; 30 years, 155; 31 years, 97; 32 years, 219; 33 years, 120; 34 years, 132; 35 years, 155; 36 years, 119; 37 years, 89; 38 years, 129; 39 years, 49; 40 years, 108; 41 years, 48; 42 years, 80; 43 years, 44; 44 years, 24; 45 years, 52; 46 years, 30; 47 years, 41; 48 years, 37; 49 years, 51; 50 years, 15; 51 years, 28; 52 years, 13; 53 years, 2; 54 years, 4; 55 years, 3; 56 years, 5; 57 years, 2; 58 years, 3; 59 years, 2; 60 years, 1; 61 years, 1; 62 years, 3; 63 years, 2; 64 years, 1; 65 years, 1; 66 years, 1; 67 years, 1; 68 years, 1; 69 years, 1; 74 years, 1.

Complications in non-fatal cases were reported as follows: Adenitis in 12; albuminuria in 3; anaphylaxis in 1; arthritis in 5; broncho pneumonia in 19; chickenpox in 23; cyanosis in 3; dermatitis in 1; dyspnea in 1; endocarditis in 2; epistaxis in 3; influenza in 5; laryngeal paralysis in 7; laryngeal stenosis in 1; laryngitis in 2; laryngismus in 1; malnutrition in 1; measles in 26; mumps in 6; myocarditis in 156; nephritis in 59; neuritis in 13; otitis media in 27; partial deafness in 1; peritonsillar abscess in 33; pneumonia in 13; post diphtheric paralysis in 47 (nasal paralysis in 1, paralysis of palate in 26); scarlet fever in 937; uremia in 3; urticaria in 5; Vincent's Angina in 7; and whooping cough in 17.

TABLE 3—SHOWING THE REPORTS OF SEVENTEEN PRINCIPAL COMMUNICABLE DISEASES FOR THE ENTIRE STATE OF ILLINOIS BY MONTHS FOR THE YEARS JULY 1, 1919 TO JUNE 30, 1920 AND JULY 1, 1920 TO JUNE 30, 1921.

Diseases.	July.		August.		September.		October.		November.		December.		January.	
	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21
Typhoid fever-----	265	162	294	211	306	284	346	257	251	198	183	109	124	96
Malaria-----	417	171	294	279	265	117	170	132	97	87	63	123	59	80
Smallpox-----	183	383	135	212	232	198	260	326	648	553	779	1,294	776	1,900
Measles-----	1,110	1,573	255	542	118	233	342	510	706	1,280	1,727	1,985	4,366	3,932
Scarlet fever-----	211	429	188	293	579	715	1,295	1,385	1,597	1,972	1,885	2,637	2,449	3,116
Whooping cough-----	618	1,650	892	1,214	723	929	554	657	818	1,059	1,206	1,290	1,143	1,530
Diphtheria-----	541	624	528	454	992	904	1,898	1,907	2,050	2,700	1,505	2,343	1,139	1,874
Influenza-----	272	55	384	124	562	163	1,723	1,217	549	283	711	520	80,020	480
Rabies-----			1		3		3					3		4
Tuberculosis (all forms)-----	1,720	1,065	1,447	729	1,627	1,205	1,719	1,012	1,693	938	1,580	1,114	1,433	989
Meningitis epidemic-----	25	7	20	12	11	15	33	16	31	20	21	9	31	20
Polioomyelitis-----	77	9	101	35	70	80	28	66	42	42	17	18	3	4
Pneumonia-----	308	282	185	215	233	266	451	325	601	604	1,275	980	7,012	1,568
Septic sore throat-----	80	74	81	94	119	91	177	153	224	293	210	206	180	178
Syphilis-----	438	743	563	449	775	681	1,137	568	1,390	530	1,349	584	1,206	655
Gonorrhea-----	954	1,365	1,075	1,066	1,083	1,301	1,137	1,530	2,324	1,397	1,599	1,230	1,413	1,087
Chancroid-----	43	77	54	96	37	63	121	70	133	83	78	65	94	104

TABLE 3—Concluded.

Diseases.	February.		March.		April.		May.		June.		Totals.	
	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21
Typhoid fever.....	80	74	88	83	115	89	103	72	138	132	2,293	1,787
Malaria.....	112	44	84	82	114	44	142	68	194	138	2,011	1,365
Smallpox.....	842	1,659	748	1,760	1,063	1,204	1,232	1,027	909	412	7,807	10,928
Measles.....	4,610	4,527	4,982	5,911	5,943	5,894	5,542	4,854	4,434	2,435	33,535	33,876
Scarlet fever.....	2,235	2,525	2,335	2,241	1,708	2,113	1,456	1,629	1,862	710	16,810	19,765
Whooping cough.....	1,222	1,327	2,061	1,482	1,204	1,440	1,460	1,406	1,464	1,821	13,275	16,165
Diphtheria.....	938	1,364	1,058	1,350	778	1,215	753	1,085	656	944	12,876	16,764
Influenza.....	80,946	424	5,731	1,293	741	309	159	125	156	63	170,954	3,056
Rabies.....	1		3	2					3		14	9
Tuberculosis (all forms).....	1,164	1,103	1,820	1,366	1,320	1,253	1,295	1,208	1,468	1,283	18,286	13,265
Meningitis epidemic.....	33	25	28	25	12	11	14	18	13	15	272	193
Polio-myelitis.....	5	7	9	7	7	3	6	5	12	27	364	303
Pneumonia.....	4,049	1,222	1,655	1,345	1,066	992	936	738	485	429	18,276	8,976
Septic sore throat.....	278	148	206	164	114	107	57	77	63	31	1,789	1,558
Syphilis.....	724	551	1,503	608	1,297	662	1,622	648	1,218	608	13,222	7,277
Gonorrhea.....	966	1,021	1,350	1,100	1,435	912	1,728	938	1,669	861	17,670	13,826
Chancroid.....	70	51	64	66	71	55	71	34	148	25	984	789

TABLE 4—SHOWING THE REPORTS OF SEVENTEEN PRINCIPAL COMMUNICABLE DISEASES FOR THE CITY OF CHICAGO, ILLINOIS BY MONTHS FOR THE YEARS JULY 1, 1919 TO JUNE 30, 1920 AND JULY 1, 1920 TO JUNE 30, 1921.

Diseases.	July		August.		September.		October.		November.		December.		January.	
	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21
Typhoid fever.....	31	14	36	11	33	47	78	41	35	29	21	22	14	18
Malaria.....	2	5	19	2	5	7	5	17	5	15	8	29	5	71
Smallpox.....	753	447	153	69	101	73	270	148	536	363	757	508	977	738
Measles.....	99	179	97	97	304	240	656	503	893	622	1,101	704	1,379	849
Scarlet fever.....	607	392	484	266	506	260	292	199	380	170	696	202	475	310
Whooping cough.....	350	386	282	230	514	453	948	937	1,112	1,313	779	1,175	601	1,026
Diphtheria.....	16	4	26	7	104	44	218	74	178	89	212	90	22,023	94
Influenza.....					1		1							
Rabies.....														
Tuberculosis (all forms).....	1,431	865	1,065	490	1,201	714	1,274	825	1,199	683	1,084	915	1,101	832
Meningitis epidemic.....	10	4	7	1		5	15	10	13	7	1	4	12	9
Polionymyeltis.....	27	1	42	19	18	21	3	18	2	9	2			
Pneumonia.....	277	231	167	172	191	237	378	272	483	466	978	696	4,687	1,161
Septic sore throat.....	1	2	2	1	3	4	14	4	32	13	39	16	32	12
Syphilis.....	353	312	658	240	719	422	743	256	548	286	524	302	497	403
Gonorrhea.....	734	770	1,151	453	940	730	964	602	1,042	661	802	69	808	588
Chancroid.....	36	32	43	23	42	37	52	31	50	38	31	36	108	38



TABLE 4—Concluded.

Diseases.	February.		March.		April.		May.		June.		Totals.	
	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21
Typhoid fever.....	4	12		15	13	10	14	4	14	11	305	234
Malaria.....				2						3		11
Smallpox.....	18	67	26	10	7	13	17	13	6	21	120	263
Measles.....	941	1,100	1,271	1,670	1,439	1,778	1,441	1,652	1,269	1,036	9,908	9,602
Scarlet fever.....	1,276	665	1,450	621	941	573	736	480	455	312	8,407	5,915
Whooping cough.....	400	369	471	389	424	589	420	422	395	579	5,330	4,007
Diphtheria.....	542	817	725	895	539	746	545	664	474	620	7,411	9,232
Influenza.....	6,606	75	997	58	135	157	58	70	21	12	31,254	774
Rabies.....											2	
Tuberculosis (all forms).....	902	897	1,366	1,094	1,020	946	885	843	1,010	872	13,538	9,976
Meningitis epidemie.....	10	8	15	12	5	9	4	2	3	6	102	77
Polionyelitis.....	3	1	3	1	1	2	1	1	3	5	105	80
Pneumonia.....	839	934	1,159	991	825	770	739	583	413	324	11,136	6,837
Septic sore throat.....	10	14	15	10	10	13	13	8	10	4	181	101
Syphilis.....	366	343	454	385	419	412	460	417	408	301	6,149	4,079
Gonorrhea.....	842	577	752	675	879	518	794	571	695	533	10,423	6,747
Chancroid.....	80	22	65	42	18	30	15	20	34	11	574	360

TABLE 5.—SHOWING THE PREVALENCE OF SEVENTEEN PRINCIPAL COMMUNICABLE DISEASES AND MORTALITY RECORD OF DEATHS FROM THESE DISEASES IN ILLINOIS BY COUNTIES AND PRINCIPAL MUNICIPALITIES FOR THE FISCAL YEAR, JULY 1, 1920 TO JUNE 30, 1921.

County.	Typhoid fever.		Malaria.		Smallpox.		Measles.		Scarlet fever.		Whooping cough.		Diphtheria.		Influenza.		Rabies.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
The State.....	1,787	370	1,365	76	10,928	29	33,676	353	19,765	361	16,165	549	16,764	1,243	3,056	597	9	2
Adams.....	18	5	10	---	---	---	662	9	56	2	8	3	49	4	9	5	---	---
Quincy.....	17	2	---	---	52	---	484	6	25	---	4	1	45	1	---	2	---	---
Alexander.....	5	9	8	2	26	---	1	---	11	---	3	3	24	3	23	6	---	---
Cairo.....	2	6	---	---	40	---	---	---	---	---	---	---	7	1	---	---	---	---
Bond.....	16	3	7	2	33	---	4	---	---	---	---	---	4	2	---	1	---	---
Boone.....	---	---	---	---	25	---	24	---	9	1	97	4	42	2	---	3	---	---
Brown.....	---	1	1	3	33	---	32	---	53	1	16	1	15	2	---	1	---	---
Bureau.....	10	1	70	---	59	---	485	3	19	---	11	---	3	---	---	1	---	---
Bureau.....	10	1	70	---	2	---	13	---	130	1	189	2	48	7	34	4	---	---
Calhoun.....	4	1	---	---	72	---	27	---	5	---	---	1	---	---	1	1	---	---
Carroll.....	2	---	---	---	150	---	64	1	22	---	17	---	14	---	16	1	---	---
Cass.....	7	1	5	1	41	---	317	1	48	2	11	---	15	1	3	5	---	---
Champaign.....	5	---	---	---	17	---	117	---	240	1	193	3	16	2	10	8	---	---
Champaign.....	7	---	---	---	12	---	69	1	69	1	29	1	10	1	---	2	---	---
Urbana.....	1	---	---	---	42	---	16	---	---	---	25	---	5	---	---	---	---	---
Christian.....	10	2	---	---	42	---	77	1	256	1	27	2	59	5	2	7	---	---
Clark.....	19	1	2	2	37	---	3	---	60	---	19	3	13	3	1	1	---	---
Clay.....	27	1	18	1	64	2	339	3	9	---	70	---	16	3	15	3	---	---
Clinton.....	4	1	139	---	30	---	9	2	30	1	48	10	85	6	54	3	---	---
Coles.....	48	1	---	---	32	---	48	---	114	---	155	5	37	2	7	1	---	---
Cook.....	24	3	---	---	13	---	8	---	18	---	82	11	11	---	---	---	---	---
Cook.....	303	30	33	1	536	2	13,408	146	7,992	188	5,766	164	10,819	762	824	151	---	2
*Berwyn.....	1	---	---	---	133	---	133	---	32	---	19	---	31	---	5	---	---	---
Blue Island.....	238	26	11	---	73	---	23	1	100	6	29	2	31	5	---	---	1	---
Chicago.....	2	1	---	---	294	---	9,678	138	6,038	168	4,110	130	9,570	698	774	134	---	1
Chicago Heights.....	---	---	---	---	2	---	7	---	133	---	4	5	62	4	---	3	---	---
Cicero.....	3	---	---	---	---	---	448	4	114	2	168	4	174	7	4	---	---	---
Everton.....	4	2	---	---	26	---	108	---	100	2	228	3	213	14	8	1	---	---
*Forest Park.....	1	---	---	---	12	---	171	---	32	---	67	---	66	---	---	---	---	---
*Maywood.....	1	---	1	---	8	---	204	---	74	41	41	---	40	---	---	---	---	---
Oak Park.....	1	---	1	---	40	---	1,249	1	280	3	379	---	129	6	5	8	---	---
Crawford.....	11	2	---	---	204	2	2	1	108	3	29	3	28	2	---	4	---	---



TABLE 5—Continued.

Counties.	Typhoid fever.		Malaria.		Smallpox.		Measles.		Scarlet fever.		Whooping cough.		Diphtheria.		Influenza.		Rabies.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
McDonough.....	20	1			22		144		43	1	59	1	10	1	39	5		
McHenry.....	4		3		39		205		134		181	2	59		152	4		
McLean.....	18	5	78		410	2	1,700	6	461	6	421	10	137	9	30	5		
Bloomington.....	9	4			168		765	5	165	1	82	4	19		2			
Macon.....	25	6			64	1	78		259	2	285	6	252	17	3	8		
DeCATur.....	23	4			10	1	50		185		114	3	268	16				
Macoupin.....	15				237		997	9	173	2	160	10	158	9	32	12		
Madison.....	13	8	4	3	254	5	393	3	117	15	139	15	267	25	10	15		
Alton.....	9	2		1	15		141		46	2	25	2	129	13	2	2		
Granite City.....		2			24		8	2	10	1	1		16					
Marion.....	38	5	20		87		53	2	28	1	93	7	21	4	46	8		
Centralia.....	7			1	28		4		16		12	1	12	3	3	1		
Marshall.....	22	2	8		8		25		128	3	10		47		127	1		
Mason.....	1	1			3		6		158		6		19		12	1		
Massac.....	14	3	12		174	1	8	2	5		13	5	72	6	12			
Menard.....	3		5		12		25		97	4	47		6	1	65			
Merret.....	8		12		7		424	2	15		109		10		40	1		
Monroe.....	17	3					11		2	1	8	1	27	4				
Montgomery.....	17	4	9		155		566	5	141	1	69	1	117			7		
Morgan.....	21	1	15		39		592	4	268	2	133	2	43	1	20			
Jacksonville.....	9	1			12		325	2	108		77	1	2			1		
Moultrie.....	5				27		57	2	47		74	2	10					
Ogle.....	6				150		142		218	4	95	3	10		8			
Peoria.....	14	7		1	69	1	168	1	1,037	14	73	11	219	1	10	5		
Peoria.....	9	5	8	1	46		60		672	5	7	4	168	24	29	20		
Perry.....	22	6			23		15	1	33		77	5	7		22	5		
Piate.....	1				12		18		42	3	96	2	207	3	2	2		
Pike.....	8	1	66				395	1	31	1	6		13	4	1	1		
Pope.....	2	3	8		14		10		3				1	1				
Pulaski.....	2	4	70	5	44		20	1					2	6	4	1		
Putnam.....			7				17		28	1	21		20		24	1		
Randolph.....	16	7	23	1	223		13		31	1	8	8	77	5				
Richland.....	4	6			301	1	128		15		64		47	4	1			
Rock Island.....	21	5	4		222		361	1	155	1	292	8	152	5	13	4		
Rock Island.....	10	2			72		193		45		78	3	82	2	2			
Rock Island.....	11	3		1	102	1	42		72	1	106	3	50	2	3			



	45	10	20	5	775	1	117	3	398	4	244	25	257	21	23	12	
St. Clair	45	10	20	5	775	1	117	3	398	4	244	25	257	21	23	12	
Belenille	4	6	4	1	33	—	3	—	46	—	8	4	40	—	15	2	
East St. Louis	19	7	59	3	503	1	83	2	171	2	76	21	133	7	21	5	
Saline	11	7	4	3	120	—	479	24	39	—	10	5	112	19	21	12	
Sangamon	47	7	4	1	114	—	500	8	1,338	14	451	4	63	7	21	16	8
Springfield	25	5	—	1	68	—	287	2	1,040	11	62	—	41	2	1	9	
Schuyler	2	1	—	1	25	—	10	—	48	—	—	1	2	—	10	1	
Scott	3	1	—	—	10	—	84	—	9	—	—	—	—	—	—	2	
Shelby	13	3	4	1	34	—	75	1	56	—	2	—	32	2	—	1	
Stark	—	—	—	—	31	—	172	—	72	—	273	7	3	—	2	1	
Stephenson	3	—	—	—	236	—	243	—	90	—	26	1	3	—	86	4	
Freeport	2	—	—	—	129	1	180	—	35	1	100	2	59	5	18	3	
Tazewell	3	3	—	—	—	—	31	—	307	3	58	1	45	4	—	1	
Pekin	3	1	—	1	59	—	—	—	191	—	82	4	33	3	104	5	
Union	14	6	186	4	20	—	4	—	27	—	—	—	32	1	1	4	
Vermilion	26	13	4	1	138	—	6	2	202	2	47	—	109	9	3	2	
Danville	11	8	1	1	—	—	41	—	20	—	314	32	55	5	21	13	
Warren	8	4	20	—	25	—	7	—	34	1	27	12	77	3	9	6	
Washington	4	—	1	—	21	—	18	1	14	—	95	3	10	1	—	1	
Wayne	27	4	5	2	25	—	146	2	53	1	25	3	57	5	5	3	
White	66	9	1	1	287	—	13	—	68	—	33	2	107	11	1	5	
Whiteside	6	1	40	—	145	—	59	1	8	—	15	1	76	15	—	5	
Will	39	9	—	—	78	—	158	4	116	1	245	6	12	2	13	6	
Joliet	21	7	—	—	124	—	787	19	183	3	442	16	192	17	53	22	
Williamson	47	20	64	9	20	—	373	10	72	2	166	10	98	9	3	9	
Herrin	—	—	—	—	619	3	41	1	49	—	122	4	126	14	6	11	
Winnebago	33	4	1	1	130	—	1	—	4	—	—	—	54	—	—	—	
Rockford	17	4	—	1	629	1	631	4	378	6	299	6	98	5	39	6	
Woodford	5	—	—	1	531	—	585	3	320	5	189	4	89	4	4	3	
State Institutions	6	—	3	—	13	—	329	—	85	4	30	2	18	1	25	1	
					2	—	111	—	23	—	12	—	72	—	33	—	

TABLE 5—Continued.

County.	Tuberculosis all forms.		Epidemic Meningitis.		Polionyelitis.		Pneumonia all forms.		Septic Sore Throat.		Syphilis.		Gonorrhea.		Chancroid.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
The State.....	13,265	5,594	193	63	303	66	8,976	4,948	1,558	190	7,277	419	13,828	41	789	---
Adams.....	76	53	---	---	2	---	13	31	---	4	19	3	40	1	1	---
Quincy.....	63	34	---	---	---	---	6	10	---	4	18	---	35	1	---	---
Alexander.....	9	46	---	---	1	---	3	14	59	---	130	3	20	3	1	---
Carro.....	6	27	---	---	---	---	---	11	---	---	130	3	78	3	---	---
Bond.....	11	10	---	---	2	1	4	13	32	1	2	1	15	---	---	---
Boone.....	2	8	---	---	---	---	11	9	---	---	---	---	---	1	---	---
Brown.....	2	4	---	---	---	---	---	9	---	1	---	---	---	---	---	---
Bureau.....	78	23	---	1	---	---	55	31	31	---	7	---	6	---	---	---
Calhoun.....	1	5	---	---	1	---	22	6	---	1	3	---	---	---	---	---
Carroll.....	4	4	1	---	---	---	1	11	2	---	---	---	1	---	---	---
Cass.....	3	6	---	---	4	3	8	17	3	---	---	1	5	---	---	---
Champaign.....	54	24	1	---	2	---	25	39	8	3	52	5	131	---	5	---
Champaign.....	42	8	1	---	1	---	3	14	---	1	30	8	4	---	5	---
Urbana.....	1	8	---	---	---	---	---	3	2	2	---	---	22	---	---	---
Christian.....	11	21	---	---	4	1	15	35	11	2	15	2	54	---	1	---
Clark.....	6	16	---	---	---	---	1	17	4	1	---	---	6	---	---	---
Clay.....	32	18	1	---	3	2	9	10	21	---	7	1	17	---	---	---
Clinton.....	9	17	---	---	2	---	1	11	8	---	3	---	13	---	3	---
Coles.....	41	38	2	---	1	---	24	28	21	7	38	4	114	---	1	---
Madison.....	33	13	1	---	---	---	8	12	---	4	21	---	88	---	1	---
Cook.....	10,287	2,940	97	30	159	11	7,129	2,545	172	34	4,253	218	7,385	12	368	---
DeKalb.....	---	---	---	---	3	---	1	---	---	---	1	---	2	---	---	---
DeWitt.....	12	2	---	---	---	---	10	13	1	1	---	---	---	1	---	---
Blue Island.....	10,047	2,947	83	28	137	8	6,337	2,554	103	20	4,204	198	7,283	9	363	---
Chicago Heights.....	5	12	---	---	---	---	13	24	---	2	89	---	49	---	3	---
Cicero.....	30	23	1	---	5	1	28	26	2	1	1	---	6	---	---	---
Easton.....	21	23	1	1	2	---	17	20	---	---	---	---	---	---	---	---
Forest Park.....	6	---	---	---	---	---	33	---	3	---	2	---	2	---	---	---
Maywood.....	25	---	---	---	---	---	19	---	---	---	---	---	---	---	---	---
Oak Park.....	16	---	---	---	2	---	95	30	---	2	---	---	---	---	---	---
Crawford.....	58	11	3	---	2	1	---	23	6	---	2	---	1	1	---	---
Cumberland.....	10	11	---	---	1	---	---	14	---	---	6	---	6	---	---	---
Dekalb.....	2	12	---	1	---	---	4	17	---	---	1	---	10	---	---	---
DeKalb.....	2	19	---	---	---	---	2	17	4	1	7	---	8	---	---	---
DeWitt.....	11	9	2	1	2	---	6	17	---	1	---	1	16	1	4	---
Douglas.....	25	11	1	---	3	---	20	7	---	---	3	---	---	---	---	---

28	DuPage	19	2	1	19	22	5	3	7	16
29	Edgar	20	1	1	20	3	9	8	8	12
30	Edwards	8				9				4
31	Elgin	18			7	13	40	1	4	4
32	Elmhurst	24			7	18	4	6	3	5
33	Elmwood	19			24	4	2	1		
34	Emery	4			1	9	2	1		
35	Franklin	40		1	56	48	57	1	40	73
36	Fulton	28		1	29	33	132	4	20	55
37	Gallatin	7				6	2	2	3	9
38	Gallatin	10			9	4				
39	Greene	14		1	7	11	1		11	23
40	Greene	38		1	11	12	6	1	1	23
41	Grundy	9		1	11	19	8	2	1	8
42	Hamilton	22			14	19				
43	Hancock	3			9	11	8	1	8	19
44	Hartford	9		1	4	4	32			
45	Henderson	11			4					
46	Henry	2				7				
47	Kewanee	32		1	24	33	11	5	16	44
48	Kewanee	7		1	11	17	8	2	8	12
49	Kewanee	7		1	11	17	8	2	8	12
50	Kewanee	7		1	11	17	8	2	8	12
51	Kewanee	7		1	11	17	8	2	8	12
52	Kewanee	7		1	11	17	8	2	8	12
53	Kewanee	7		1	11	17	8	2	8	12
54	Kewanee	7		1	11	17	8	2	8	12
55	Kewanee	7		1	11	17	8	2	8	12
56	Kewanee	7		1	11	17	8	2	8	12
57	Kewanee	7		1	11	17	8	2	8	12
58	Kewanee	7		1	11	17	8	2	8	12
59	Kewanee	7		1	11	17	8	2	8	12
60	Kewanee	7		1	11	17	8	2	8	12
61	Kewanee	7		1	11	17	8	2	8	12
62	Kewanee	7		1	11	17	8	2	8	12
63	Kewanee	7		1	11	17	8	2	8	12
64	Kewanee	7		1	11	17	8	2	8	12
65	Kewanee	7		1	11	17	8	2	8	12
66	Kewanee	7		1	11	17	8	2	8	12
67	Kewanee	7		1	11	17	8	2	8	12
68	Kewanee	7		1	11	17	8	2	8	12
69	Kewanee	7		1	11	17	8	2	8	12
70	Kewanee	7		1	11	17	8	2	8	12
71	Kewanee	7		1	11	17	8	2	8	12
72	Kewanee	7		1	11	17	8	2	8	12
73	Kewanee	7		1	11	17	8	2	8	12
74	Kewanee	7		1	11	17	8	2	8	12
75	Kewanee	7		1	11	17	8	2	8	12
76	Kewanee	7		1	11	17	8	2	8	12
77	Kewanee	7		1	11	17	8	2	8	12
78	Kewanee	7		1	11	17	8	2	8	12
79	Kewanee	7		1	11	17	8	2	8	12
80	Kewanee	7		1	11	17	8	2	8	12
81	Kewanee	7		1	11	17	8	2	8	12
82	Kewanee	7		1	11	17	8	2	8	12
83	Kewanee	7		1	11	17	8	2	8	12
84	Kewanee	7		1	11	17	8	2	8	12
85	Kewanee	7		1	11	17	8	2	8	12
86	Kewanee	7		1	11	17	8	2	8	12
87	Kewanee	7		1	11	17	8	2	8	12
88	Kewanee	7		1	11	17	8	2	8	12
89	Kewanee	7		1	11	17	8	2	8	12
90	Kewanee	7		1	11	17	8	2	8	12
91	Kewanee	7		1	11	17	8	2	8	12
92	Kewanee	7		1	11	17	8	2	8	12
93	Kewanee	7		1	11	17	8	2	8	12
94	Kewanee	7		1	11	17	8	2	8	12
95	Kewanee	7		1	11	17	8	2	8	12
96	Kewanee	7		1	11	17	8	2	8	12
97	Kewanee	7		1	11	17	8	2	8	12
98	Kewanee	7		1	11	17	8	2	8	12
99	Kewanee	7		1	11	17	8	2	8	12
100	Kewanee	7		1	11	17	8	2	8	12

TABLE 5—Continued.

County.	Tuberculosis all forms.		Epidemic Meningitis.		Polio-myelitis.		Pneumonia all forms.		Septic Sore Throat.		Syphilis.		Gonorrhea.		Chancroid.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Macon.....	55	46	1	—	1	—	—	45	—	—	214	10	314	1	3	—
Decatur.....	49	37	1	—	1	—	—	37	—	1	214	—	309	1	2	—
Macoupin.....	7	16	6	1	—	—	15	41	13	1	14	—	95	—	—	—
Madison.....	65	84	—	—	10	3	48	70	2	6	167	9	499	—	59	—
Alton.....	37	19	—	—	—	—	17	15	—	1	129	—	298	—	49	—
Granite City.....	15	15	—	—	1	—	1	4	—	2	11	3	40	—	—	—
Marion.....	28	28	—	—	—	—	17	23	11	1	6	1	15	1	—	—
Centralia.....	27	5	—	—	—	—	—	6	—	—	2	1	6	—	—	—
Marshall.....	1	9	1	—	—	—	9	9	—	—	—	—	3	—	—	—
Mason.....	33	14	3	—	—	—	3	8	7	—	14	—	36	—	1	—
Massac.....	34	18	—	—	—	—	44	8	5	2	—	—	17	—	—	—
Menard.....	5	10	—	—	1	—	10	5	9	—	2	1	—	—	—	—
Merger.....	1	5	—	—	2	—	4	11	13	—	—	—	6	—	—	—
Monroe.....	10	3	—	—	—	—	1	4	3	—	—	—	—	—	—	—
Montgomery.....	68	28	—	—	1	—	10	27	29	3	55	4	47	1	41	—
Montgomery.....	98	42	1	—	—	—	30	56	54	—	95	10	42	1	2	—
Jacksonville.....	89	35	1	—	1	—	2	31	—	—	77	9	32	1	—	—
Moultrie.....	1	7	2	—	—	—	—	10	—	—	—	—	19	—	—	—
Ogle.....	25	113	—	—	—	—	47	19	2	—	1	—	16	—	—	—
Peoria.....	114	—	—	—	2	3	9	95	2	6	224	1	370	2	25	—
Peoria.....	80	48	1	1	4	3	4	70	2	5	223	13	369	2	24	—
Perry.....	4	12	2	—	—	—	6	9	62	1	3	3	12	—	2	—
Platt.....	15	11	—	—	1	—	7	6	—	—	—	—	5	1	—	—
Pike.....	11	9	—	—	1	—	15	17	25	1	5	—	15	—	1	—
Pope.....	4	9	—	—	2	—	2	3	1	—	3	1	4	—	—	—
Pulaski.....	4	22	—	—	4	—	8	13	—	—	3	—	4	—	—	—
Putnam.....	9	4	3	—	—	—	—	5	—	—	3	—	4	—	4	—
Randolph.....	133	23	—	—	5	—	13	16	12	—	5	—	8	—	—	—
Richland.....	11	15	2	—	—	—	4	15	1	—	3	1	3	—	1	—
Rock Island.....	186	78	4	—	3	1	137	60	1	8	287	3	957	1	27	—
McLeane.....	59	25	3	—	—	—	38	75	—	2	96	2	467	1	15	—
Rock Island.....	61	30	1	—	2	—	71	21	6	6	189	1	368	—	11	—
St. Clair.....	89	109	3	—	8	3	43	113	10	5	302	15	470	2	112	—
Bellville.....	5	22	—	—	—	—	3	22	—	—	12	—	72	—	4	—
East St. Louis.....	73	64	3	—	3	—	21	67	7	6	239	10	396	2	107	—
Saline.....	33	41	—	—	3	1	22	39	28	4	29	1	154	1	19	—



Sangamon.....	139	1	8	4	80	88	77	257	10	280	4	17
Springfield.....	52	—	4	3	44	60	—	245	10	251	4	16
Schuyler.....	13	—	—	—	2	14	1	—	—	—	1	—
Scott.....	7	—	—	—	—	5	—	2	—	9	—	2
Shelby.....	19	2	—	—	3	19	15	1	—	—	—	—
Stack.....	3	—	—	—	5	4	—	9	—	—	—	—
Stark.....	1	—	—	—	—	4	—	3	—	—	—	—
Stephenson.....	20	2	—	2	13	24	5	29	2	82	—	1
Freeport.....	1	—	—	—	9	19	—	29	2	80	—	1
Tazewell.....	17	—	—	—	2	16	4	36	—	59	—	11
Pekin.....	15	—	—	—	2	5	—	30	—	47	—	8
Union.....	59	—	2	1	3	19	32	1	2	11	—	1
Vermilion.....	110	1	1	—	41	65	11	14	2	210	1	14
Danville.....	75	1	—	—	15	27	—	3	2	184	1	7
Warren.....	31	1	—	—	10	4	—	125	2	—	—	—
Wabash.....	10	—	—	—	3	13	18	3	—	—	—	—
Washington.....	1	5	2	—	1	12	8	1	—	27	—	—
Wayne.....	9	—	—	—	1	19	—	27	1	2	—	—
White.....	22	1	—	1	6	19	16	4	—	5	—	—
Whiteside.....	14	—	—	—	13	19	72	9	—	5	—	—
Will.....	36	14	2	1	33	28	—	2	—	2	—	1
Joliet.....	14	—	1	1	84	75	56	56	1	279	2	16
Williamson.....	7	3	—	—	41	31	—	34	1	272	—	15
*Herrin.....	30	1	—	—	14	35	12	12	1	19	1	1
Winnebago.....	52	1	2	2	1	—	—	3	—	4	—	—
Rockford.....	1	—	1	—	1	66	10	101	12	406	1	22
Woodford.....	61	1	1	1	40	7	—	3	10	397	—	22
†State Institutions.....	54	3	1	1	36	62	—	101	10	2	—	—
	46	1	1	1	4	7	—	4	—	149	—	5
	3	3	—	—	85	—	62	—	—	—	—	—
	240	2	—	—	—	—	—	120	—	—	—	—

\* Not designated by the U. S. Bureau of the Census until 1921 to be shown separately; hence, mortality figures for the last six months of 1920 are not available.  
† All deaths which occurred in State Institutions are included in the total deaths for the County in which the Institution is located.

TABLE 6—COST OF COMMUNICABLE DISEASES

County.	Estimated population Jan. 1, 1921.	Typhoid fever.	Malaria.	Smallpox.	Measles.	Scarlet fever.	Whooping cough.	Diphtheria.	Influenza.
The State	6,572,492	\$1,906,600	\$2,128,520	\$1,124,479	\$548,692	\$710,651	\$638,360	\$1,120,205	\$1,913,094
Adams	*62,188	\$ 25,512	\$ 1,605	\$ 4,942	\$ 11,581	\$ 2,506	\$ 3,451	\$ 3,443	\$ 27,993
Alexander	24,108	45,912	70,205	13,302	21	281	3,451	2,418	25,033
Bond	*16,045	15,312	70,205	3,137	51	1,306	4,601	2,168	3,113
Boone	*15,322	5,112		2,377	251	1,581	1,151	1,618	9,333
Brown	*9,336	5,112		287	331	481	111	93	3,113
Bureau	*42,648	5,112	11,205	5,607	6,511	3,806	2,991	5,618	12,743
Calhoun	*8,245	5,112		192	141	156	1,151		3,113
Carroll	19,479	812		6,842	281	556	171	368	163
Cass	17,950	5,112	3,265	15,107	1,201	2,606	111	968	15,553
Champaign	57,487	5,112	3,905	3,897	3,731	6,556	3,581	1,618	24,903
Christian	38,856	10,212		3,992	1,331	6,956	2,301	4,243	21,773
Clark	*21,165	5,112	6,525	3,517	41	1,506	3,451	1,618	3,113
Clay	*17,684	8,512	35,105	12,282	5,051	231	701	2,418	3,253
Clinton	22,959	5,112	22,245	2,852	1,201	1,306	11,501	5,693	9,843
Coles	35,168	22,012	165	3,042	491	2,856	5,751	2,043	6,273
Cook	3,119,741	141,200	8,385	50,922	214,391	303,205	188,601	689,593	476,343
Crawford	*22,771	10,212		25,772	1,061	4,356	3,451	1,818	12,443
Cumberland	12,858	5,112	965	382	41	1,856	111	3,218	3,303
DeKalb	*31,339	5,112		2,947	1,021	2,506	2,391	368	9,393
DeWitt	19,288	15,312	325	6,082	1,521	1,106	6,901	3,218	9,513
Douglas	19,738	26,912		667	311	2,931	4,601	893	6,223
DuPage	43,014	2,212		1,332	3,361	3,881	2,691	7,218	3,183
Edgar	*25,769	5,512	645	3,612	2,111	2,656	8,051	2,418	10,523
Edwards	*9,431	5,112		3,232	851	2,606	3,451	1,618	3,123
Effingham	*19,556	10,212	165	1,997	1,071	406	2,301	1,618	53
Fayette	*26,187	25,512	1,625	18,717	1,051	331	5,751	3,218	12,473
Ford	*16,466	10,212	165	12,637	1,341	3,156	1,151	341	13
Franklin	60,523	61,212	70,205	59,187	2,331	931	4,601	12,818	22,273
Fulton	*48,163	5,112	5,505	21,297	1,061	10,156	2,501	6,418	69,233
Gallatin	*12,856	15,312	105,305	7,127	1,101	3,906	101	868	15,553
Greene	22,937	15,312		572	551	906	591	168	9,363
Grundy	*18,580	5,112	1,125	667	881	1,506	2,681	618	18,853
Hamilton	*15,920	25,512	35,105	10,702	701	606	2,301	4,343	9,333
Hancock	*28,523	12,612	1,445	17,862	6,071	1,531	3,191	1,618	28,073
Hardin	7,587	20,412	2,085	2,662	5,261		41	3,218	
Henderson	9,774	212	645	1,142	221	606	1,011		12,443
Iroquois	45,514	25,512		9,562	8,121	20,431	7,491	14,143	25,253
Ingham	*34,841	10,012		4,467	651	4,506	3,631	3,643	9,473
Jackson	37,291	45,912	315,905	41,292	671	2,206	6,901	11,693	15,943
Jasper	*16,064	10,212	325	5,037	1,091	231	2,301	843	13
Jefferson	*28,480	61,212	35,105	11,402	9,461	1,306	10,351	4,018	9,473
Jersey	*12,682	15,312	165	11,402	2,301	456	401	443	9,473
JoDavies	*21,917	412		8,267	131	2,556	1,151	193	6,223
Johnson	*12,022	612	35,105	2,947	191	231	1,151	3,218	333
Kane	100,285	25,512		3,042	25,591	6,206	7,691	8,093	49,763
Kankakee	45,372	10,812	1,285	1,617	4,851	2,656	5,751	6,668	13,513
Kendall	*10,074	2,012		287	881	431	1,751	268	3,153
Knox	46,785	20,412		12,352	10,111	6,506	3,361	2,918	10,143
LaSalle	93,213	20,412	3,265	17,767	6,311	8,181	11,501	5,618	15,743
Lake	76,265	56,112		4,657	13,661	9,106	9,201	6,568	34,213
Lawrence	*21,380	20,412	12,345	9,217	3,161	3,356	5,751	2,743	3,363
Lee	28,030	1,202		2,567	221	5,206	1,441	843	6,233
Livingston	*39,070	1,212	325	5,417	1,291	4,061	4,861	2,843	9,383
Logan	*29,562	5,112	3,265	9,952	1,561	5,181	4,601	1,143	22,023
McDonough	27,094	7,112		2,092	1,451	1,651	1,141	818	15,893
McHenry	33,232	812	485	3,707	2,061	3,356	2,911	4,243	13,923
McLean	70,323	25,512	12,485	45,152	20,311	14,831	11,501	8,393	15,893
Macon	66,307	30,612	3,265	6,082	791	7,581	6,901	15,668	24,883
Macoupin	57,952	20,412		22,517	14,931	5,431	11,501	8,918	37,523
Madison	108,651	40,812	105,305	39,632	5,591	19,506	17,251	20,442	46,653
Marion	37,745	25,512	35,105	8,267	1,641	706	8,051	7,493	25,263
Marshall	*14,760	10,612	1,285	762	261	4,856	101	2,843	4,373
Mason	*16,634	10,212		287	71	3,956	61	318	3,223
Massac	*13,559	15,312	1,920	19,632	2,111	131	5,751	5,118	123
Menard	*11,694	612	805	1,142	811	4,631	471	818	3,753
Mercer	*18,800	5,112	1,925	667	5,351	381	1,091	268	3,503

FOR THE FISCAL YEAR JULY 1, 1920 TO JUNE 30, 1921.

Rabies.	Tuberculosis, all forms.	Meningitis epidemic.	Poliomyelitis.	Pneumonia.	Septic sore throat.	Syphilis.	Gonococcus infection.	County total.	Per capita.
\$6,750	\$72,207,900	\$105,125	\$58,800	\$18,140,755	\$323,077	\$2,043,140	\$175,495	\$103,933,543	\$15 81
	\$ 690,100		\$ 100	\$ 112,955	\$ 6,346	\$ 11,420	\$ 4,160	\$ 915,114	14 71
	528,800		50	51,075	596	22,420	11,335	774,899	32 14
	135,800		800	47,435	326	3,420	3,785	291,459	18 17
	109,600		800	32,875	1,591		3,160	169,449	11 05
	57,200			32,875		220	60	99,883	10 70
	306,100	\$ 650		112,955	316	820	235	474,669	11 13
	120,300			21,955	1,591			153,711	18 64
	57,200	25		40,155	26	3,520	60	110,179	5 66
	83,400		2,400	61,995	36	3,320	160	195,234	10 88
	319,200	25	800	142,075	4,801	20,820	3,310	544,334	9 47
	279,900		750	127,515	3,266	6,520	1,385	470,144	12 36
	214,400			61,995	1,621		185	301,578	14 26
	238,800		1,600	36,515	216	3,920	460	349,064	19 74
	227,500	25	100	43,795	86	3,520	360	335,139	14 60
	502,600	50	50	102,035	11,241	16,320	2,885	677,814	19 27
6,300	37,208,800	50,250	14,000	9,263,915	55,276	1,100,220	221,860	49,993,262	16 02
	148,900	3,560	50	83,835	66		185	295,709	13 43
	162,000	1,840		51,075		220	285	230,408	17 92
	253,700			61,695	1,621	3,920	235	345,209	11 02
	122,700	650	100	61,995	1,621	3,320	3,535	237,899	12 33
	148,900	25	150	25,595	1,591	420		219,219	11 11
	253,700		800	80,195	4,756	820	435	364,584	8 48
	256,800	1,675	800	33,145	96	920	335	329,299	12 78
	109,600			11,035			435	141,063	14 96
	240,600			47,435	1,981	19,320	185	327,384	16 74
	319,200			65,635	46	420	160	454,139	17 34
	96,500	1,675		32,875	1,601	3,320		164,989	10 02
50	528,800		800	174,835	2,151	25,820	1,860	967,874	15 99
	371,600	1,675		120,235	7,626	11,420	1,410	635,249	13 19
	109,600	3,350		1,330	6,346			269,849	20 99
	188,200		800	40,155	16	1,220	610	258,464	11 27
	122,700	25	800	43,795	66	3,320	60	202,209	10 88
	293,000	50		69,275	3,236		235	454,399	28 54
	188,200	25	50	40,155	1,661	920	510	303,924	10 66
	148,900			14,675	326			197,580	26 04
	31,000			25,595				72,875	7 46
	424,000	25	800	120,235	7,991	1,720	4,135	669,519	14 71
	188,200	1,725	100	66,175	126	9,720	3,485	305,914	8 78
	463,300	1,725	250	87,475	3,346	25,020	710	1,032,349	27 68
	120,500	25	150	11,035	26	220	85	152,094	9 47
	594,300	1,675	1,600	102,035	3,236	220	85	845,479	29 69
	109,600		50	18,315	36	3,320	135	171,409	13 52
	162,000		50	69,275		420	135	250,813	11 44
	122,700			18,315	1,961	520	85	187,369	15 59
	1,275,500	1,675	300	287,675	6,346	24,220	8,960	1,730,574	17 26
	1,019,700		150	116,595	4,991	3,520	110	1,192,229	26 28
	44,100		50	21,955	36	620	185	75,729	7 52
	371,600	50	300	105,675	3,186	25,320	1,310	573,244	12 25
	948,000	3,350	1,500	287,675	7,931	10,820	3,335	1,351,409	14 50
	489,500	5,025	3,200	193,035	3,206	14,020	1,910	843,414	11 06
	201,300		50	51,075	1,691	4,320	435	319,219	14 93
	227,500			47,435	26		135	292,819	10 45
	162,000		800	80,195	1,591	5,720	935	280,634	7 18
	476,400	25	50	109,315	3,176	13,920	260	646,984	21 89
	253,700	25		40,155	1,681	13,120	135	338,954	12 51
	245,400		800	91,115	1,631	4,020	410	374,874	11 28
	633,600	50	800	163,912	4,912	8,820	5,160	871,344	13 81
	607,400	25	50	163,915	1,591	52,520	10,985	932,269	14 06
	214,400	1,725	800	149,355	1,711	7,720	2,410	499,354	8 62
	1,105,200		2,400	254,915	9,516	44,720	12,385	1,724,329	15 87
	371,600			83,835	1,691	3,820	3,510	576,494	15 27
	122,700	1,675		32,875			110	182,453	12 36
	188,200	75		29,235	76	1,520	935	238,169	14 32
	240,600			33,955	3,206	6,520		334,379	24 66
	135,800		50	18,315	96	3,420	460	171,184	14 64
	70,300		100	40,155	136	320	60	129,369	6 88

TABLE 6

County.	Estimated population Jan. 1, 1921.	Typhoid fever.	Malaria.	Smallpox.	Measles.	Scarlet fever.	Whooping cough.	Diphtheria.	Influenza.
Monroe.....	\$*12,839	\$ 15,312	-----	-----	\$ 121	\$ 1,306	\$ 1,151	\$ 693	\$ 3,113
Montgomery.....	42,031	20,412	\$ 1,445	\$14,727	8,421	4,081	1,241	5,143	21,773
Morgan.....	*33,567	6,512	2,405	3,707	8,131	7,806	2,431	1,643	3,303
Moultrie.....	14,861	1,012	-----	2,567	1,681	1,181	2,301	268	83
Ogle.....	*26,830	1,212	-----	14,252	1,431	7,656	3,451	818	15,603
Peoria.....	112,890	35,712	3,265	9,657	2,241	33,631	12,651	21,618	62,293
Perry.....	22,985	30,612	1,285	4,752	1,061	831	5,751	3,093	15,723
Piatt.....	*15,714	212	165	2,187	191	3,906	2,301	6,843	6,223
Pike.....	*22,866	5,112	10,565	1,142	4,511	1,331	61	3,218	3,113
Pope.....	*9,625	15,312	1,285	1,332	111	81	-----	1,618	3,143
Pulaski.....	*14,629	20,412	175,505	4,182	1,061	1,206	211	4,818	3,343
Putnam.....	7,581	-----	1,125	-----	81	1,256	1,151	68	3,113
Randolph.....	*29,109	35,712	35,105	21,187	161	1,331	9,201	4,693	-----
Richland.....	*14,044	30,612	-----	31,697	1,291	931	-----	3,393	13
Rock Island.....	94,553	25,512	3,745	24,192	3,171	4,431	9,201	6,568	12,533
St. Clair.....	138,232	51,012	175,505	76,727	3,161	9,906	27,601	17,993	37,443
Saline.....	39,193	35,712	105,305	14,402	25,211	981	5,751	15,218	37,413
Sangamon.....	101,214	35,712	3,745	10,832	9,411	41,156	4,601	5,618	49,843
Schuyler.....	*13,285	5,112	3,265	2,377	111	1,206	1,151	68	3,203
Scott.....	*9,489	5,112	-----	952	1,391	231	2,301	-----	6,223
Shelby.....	*29,601	15,312	3,745	3,232	1,311	1,406	8,051	1,918	3,123
Stark.....	9,693	-----	-----	97	1,731	1,806	1,151	93	13,263
Stephenson.....	37,837	612	-----	25,522	2,441	3,031	2,301	4,243	9,483
Tazewell.....	39,004	15,312	3,265	5,607	321	9,331	821	2,818	16,543
Union.....	*20,249	30,612	140,405	6,652	2,111	681	471	7,693	6,233
Vermilion.....	87,004	66,312	3,745	13,112	421	6,156	36,801	4,168	40,513
Wabash.....	*14,034	20,412	3,205	2,381	1,061	356	1,501	3,593	3,193
Warren.....	*21,488	212	165	1,997	2,571	1,881	3,451	818	3,113
Washington.....	*18,035	15,312	-----	2,381	141	1,706	2,301	4,193	9,453
Wayne.....	*22,772	20,412	70,205	27,267	181	581	1,151	8,743	15,553
White.....	*20,081	45,912	35,105	13,777	1,151	206	1,151	12,018	15,553
Whiteside.....	36,346	5,112	6,405	7,412	3,791	3,456	6,901	1,618	18,733
Will.....	93,791	45,912	-----	11,782	19,961	6,231	18,401	14,168	68,733
Williamson.....	62,740	102,012	315,905	68,107	971	1,231	4,601	11,218	43,543
Winnebago.....	93,791	20,412	3,265	62,857	8,521	12,756	6,901	5,218	18,993
Woodford.....	*19,340	1,012	-----	1,237	3,301	4,331	2,301	1,018	3,353

\* Population as of Jan. 1, 1920: Decrease between 1910 and 1920; no estimate as of July 1, 1920 made.



Concluded.

Rabies.	Tuberculosis, all forms.	Meningitis epidemic.	Poliomyelitis.	Pneumonia.	Septic sore throat.	Syphilis.	Gonorrœus infection.	County total.	Per capita.
-----	\$ 44,100	-----	-----	\$ 14,675	\$ 36	-----	\$ 60	\$ 76,761	\$ 5.98
-----	245,400	\$1,675	\$ 50	98,395	6,021	\$18,020	4,310	451,114	10.73
-----	555,000	25	50	203,955	546	40,620	4,185	840,319	25.03
-----	70,300	50	-----	36,515	-----	920	510	117,388	7.90
-----	96,500	-----	-----	69,275	26	220	135	210,579	7.85
-----	1,485,100	1,675	2,400	349,555	9,516	72,120	15,485	2,116,919	18.74
-----	162,000	50	-----	32,875	2,201	9,720	335	271,289	11.80
-----	148,900	-----	50	21,955	16	420	160	193,529	12.32
-----	122,700	-----	50	61,995	1,831	620	410	216,659	9.48
-----	122,700	-----	-----	11,035	1,591	3,520	135	161,863	16.82
-----	293,000	-----	1,600	47,435	-----	420	135	553,328	37.82
-----	57,200	75	-----	18,315	-----	420	135	82,939	10.94
-----	306,100	-----	1,600	58,355	1,701	3,720	235	479,101	16.46
-----	201,300	50	-----	18,315	1,591	3,520	3,210	295,923	21.07
-----	1,052,800	100	800	218,515	12,686	50,520	27,060	1,451,734	15.35
-----	1,432,700	3,350	2,400	411,435	7,981	76,820	17,985	2,352,009	17.01
-----	541,900	-----	800	142,075	6,586	6,120	6,985	941,459	24.02
\$406	1,825,700	25	3,200	325,120	776	56,820	19,585	2,392,544	23.64
-----	173,800	-----	-----	51,075	16	-----	3,160	244,544	18.41
-----	95,800	-----	-----	18,315	-----	320	-----	130,645	13.77
-----	253,700	50	-----	69,275	1,731	1,020	260	364,134	12.30
-----	44,100	-----	-----	14,675	1,591	420	-----	78,927	8.14
-----	266,800	50	-----	87,475	7,931	9,220	2,085	421,194	11.13
-----	227,500	-----	-----	58,355	3,176	3,120	1,210	347,379	8.91
-----	777,700	-----	800	69,275	1,901	22,520	310	1,067,364	52.71
-----	987,300	3,350	50	236,715	22,196	19,320	5,535	1,445,694	16.62
-----	122,700	-----	-----	14,675	1,761	-----	-----	174,838	12.46
-----	162,000	3,350	-----	47,435	4,811	2,820	710	235,334	10.95
-----	122,700	-----	100	43,765	1,591	3,320	85	207,078	11.48
-----	293,000	25	800	69,345	1,591	-----	160	509,014	22.35
-----	240,600	-----	-----	69,345	166	520	160	435,664	21.70
-----	188,200	-----	800	102,035	3,876	1,020	110	349,660	9.62
-----	1,210,000	1,650	850	273,115	6,866	8,820	13,210	1,699,649	18.12
-----	686,000	25	1,600	127,515	4,851	4,420	3,610	1,375,609	21.93
-----	817,000	5,025	800	240,355	6,406	47,420	13,285	1,269,214	13.53
-----	83,400	75	-----	25,595	1,591	520	85	127,819	6.61

## DIVISION OF TUBERCULOSIS.

GEORGE THOMAS PALMER, M. D., *Acting Chief.\**

Throughout the fiscal year that ended June 30, 1921, the Division of Tuberculosis continued to function along the cooperative lines established in the past and described at length in the third annual report. During the last four months of the year, however, the activities of the division were somewhat curtailed due to the resignation of the Assistant Director of the Department of Public Health, who also acted as chief of the Division of Tuberculosis. The position was still vacant at the close of the fiscal year.

Due to the very limited appropriation by the State for tuberculosis work and the continuation of the established policy of close cooperation

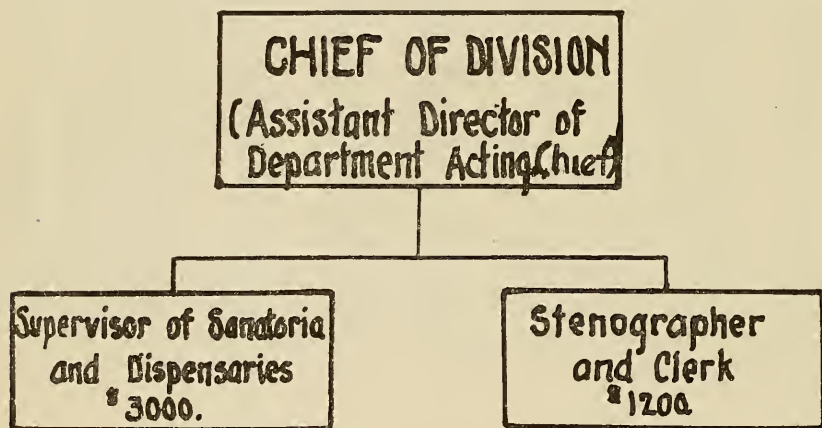


Figure XII—Divisional Organization for Biennium, 1921-23.

with the Illinois Tuberculosis Association and other governmental and extra-governmental agencies, the greater part of the anti-tuberculosis work accomplished during the year was carried out through the activities of the Illinois Tuberculosis Association and county and municipal organizations.

While the field service has been largely in the hands of other agencies, still the division has been responsible for carrying out those functions that only the State Department of Public Health is prepared and authorized to do and which have been highly important contributing factors in the success that has attended the anti-tuberculosis program in Illinois during recent years. These functions include the following:

\* Resigned March 1, 1921.

1. The examination of plans for county tuberculosis sanatoria construction. Such plans must, according to law, be approved by the State Department of Public Health prior to their utilization.
2. The inspection of sites chosen by counties for the erection of sanatoria. This work has been done through the assistance of the sanitary engineers of the department.
3. The inspection of existing municipal and county tuberculosis sanatoria with especial reference to their sanitary conditions and their fitness for the purpose for which they were built.
4. The preparation and enforcement of uniform rules and regulations for the control of pulmonary tuberculosis.
5. Joint supervision over the placement and activities of community and county public health nurses.

In addition to these things, which have consumed a great amount of time, the division has prepared a popular pamphlet on the cause, prevention and care of tuberculosis. This bulletin has been widely circulated throughout the State both directly to the public and through the medium of the various organizations engaged in tuberculosis work. It has been so popular that several reprints and revisions have been necessary, the last one having been made for 25,000 copies during the fiscal year.

In performing its functions as outlined above the division has been identified with maintaining a clinical service throughout the State that has been made possible through the support and cooperation of the medical profession. This service is also participated in by county and municipal school nurses. Besides these, an average of thirty county medical society diagnostic clinics have been held during each month.

Close contact has been maintained at all times with the sixty-four tuberculosis nursing services established in various parts of the State so that reports of numerous surveys as well as other valuable data have found their way to the division. This has been due almost wholly to the cooperation of the supervising nurse of the Illinois Tuberculosis Association, since the department has not been able to fill satisfactorily the position of State supervising nurse.

During the year the division cooperated and assisted extensively in the selection of sanatoria personnel, the formation of rules for operating sanatoria and the creation of diagnostic dispensaries and nursing service. It has also given material assistance to cooperating agencies in planning and carrying out a program of the modern health crusade in which 500,000 school children were enrolled and who have been active in many public health functions, especially tuberculosis.

The widespread favorable public opinion relative to active anti-tuberculosis service on a large scale has been expressed during the year through the enormous sums of money appropriated by various counties for this work. The total appropriation by counties for sanatoria work in 1920 and 1921 amounted to \$2,664,250, or a yearly sum equal to more than twice the annual appropriation to the State Department of Public Health for the next biennium.

At the November election four new counties voted to establish tuberculosis sanatoria and the county boards of supervisors were

authorized to make the necessary appropriations. These counties were Knox, Montgomery, Rock Island and Shelby. Four other counties voted in favor of levying a definite excess tax for sanatorium maintainance purposes. These, together with the sums for which the taxes were levied, are: Christian, \$30,000 annually for five years; Macon, \$75,000 annually for five years; Madison, \$75,000; Will, \$100,000 for the first year, and \$50,000 annually thereafter for three years. Other counties that made appropriations during the year, together with the sums in each case, are: Adams, \$40,000; Boone, \$3,000; Champaign, \$90,000; Clay, \$16,000; Crawford, \$3,500; DeWitt, \$90,000; Douglas, \$15,000; Fulton, \$5,000; Grundy, \$10,000; Jackson, \$5,000; Kane, \$51,000; Livingston, \$96,000; McDonough, \$45,000; McLean, \$71,850; Piatt, \$38,000; Pike, \$12,000; Ogle, \$30,000; Tazewell, \$35,000; Vermilion, \$37,000; Whiteside, \$6,000; Winnebago, \$25,000; and Woodford, \$6,000.

The total appropriation by all counties to be expended during 1921 for tuberculosis sanatorium purposes was \$946,350. This sum, however, does not include all money available for use specified since a number of counties found surplus funds on hand that had been appropriated but not expended in previous years. Neither do the sums referred to in this report include money spent by the various extra-governmental agencies. Altogether, therefore, the figures representing the grand total of money spent in Illinois during the year for tuberculosis work runs well into the millions.

At the end of the fiscal year county tuberculosis sanatoria were in operation in Adams, DeKalb, Kane, LaSalle and McLean Counties, while sanatoria were practically completed in Champaign, McDonough, Tazewell, Morgan and Woodford Counties. Sanatoria were also in definite process of construction in Champaign, Livingston and Macon Counties. Municipal sanatoria were in operation in Chicago, Peoria, Rockford and Rock Island. In Rockford a working plan has been adopted to change the Rockford municipal sanatorium to a Winnebago County sanatorium. In Rock Island County the proposition carried to abandon the Rock Island municipal sanatorium and create a Rock Island County sanatorium. In Morgan County the municipal sanatorium voted by the people, but never erected, had been abandoned for the establishment of the Morgan County sanatorium.

In continuation of a program for the standardization of Illinois sanatoria, inspections of public sanatoria and their rating according to the plan approved by the American Sanatorium Association were completed. This work was accomplished through the joint efforts of the State Department of Public Health and the Illinois Tuberculosis Association, and the results of the study are now available for the benefit of interested people.

The results of the tuberculosis campaign in Illinois, embracing the activities of all organizations whether National, State, county or municipi-



pal, have been to reduce in a large measure the number of deaths from tuberculosis. Since the fiscal year 1917-1918, the actual number of deaths from all forms of tuberculosis in Illinois, has been reduced from 8,402 to 5,594, or a decrease of 2,808, according to the statistical records of the State Department of Public Health. During the fiscal year that has just closed the number of deaths from all forms of tuberculosis in the State decreased from 6,741 to 5,594, or a reduction of 1,147 deaths in a single year. These reductions in the actual number of deaths have been made in the face of a steadily increasing population, so that the tuberculosis death rate per 100,000 of population has shown a decrease that is gratifying indeed. The tabulation below shows the estimated population for the State, the number of deaths from all forms of tuberculosis, and the mortality rate per 100,000 people from tuberculosis for the years indicated:

Fiscal year.	Population.	Deaths from tuberculosis all forms.	Rate per 100,000 of population.
1917-1918 .....	6,276,364	8,402	133.9
1918-1919 .....	6,359,102	7,820	123.0
1919-1920 .....	6,485,068	6,741	103.9
1920-1921 .....	6,572,492	5,594	85.1

With the pronounced success that has so notably attended the anti-tuberculosis movement in Illinois in recent years has come the belief, on the part of the State Department of Public Health, that the time is ripe for a change in policy by extra-governmental and local agencies active in the field of tuberculosis, so that the scope of their service will be broadened and enlarged to cover general public health work in greater detail than is done at the present time. For example, it would doubtless work to the decided advantage of many counties in the State to appropriate sums of money similar to those noted above for the creation of a county department of health that would carry on all forms of public health service, including tuberculosis, rather than to limit such appropriations to tuberculosis and especially sanatorium construction work. Such a plan would not curtail in the least the tuberculosis work but would, on the other hand, bring to the people, especially those in rural districts, a public health service extensive enough to more nearly meet the crying needs that are apparent on every hand. As for sanatorium care for the tuberculous in the several counties, the plan would recommend that sanatoria already built or in the process of construction be operated in a way to accommodate patients from any part of the State for a reasonable cost per capita. The plan commends itself as a practical means of meeting the public health needs of the several counties. At the same time it will permit the continuation and extension of the present methods employed in fighting tuberculosis.

## DIVISION OF ENGINEERING AND SANITATION.

HARRY F. FERGUSON, *Chief Sanitary Engineer.*

That portion of the laws prescribing the duties and powers of the State Department of Public Health and the rules adopted by the department in conformance with the act creating it which govern the activities of the Division of Engineering and Sanitation are listed on pages 54-55 of the third annual report of the department. No new laws have been enacted or rules adopted or changed during the fiscal year that affect the activities of the Division of Engineering and Sanitation and the work has, therefore, been carried out in accordance with the laws and rules presented in the third annual report.

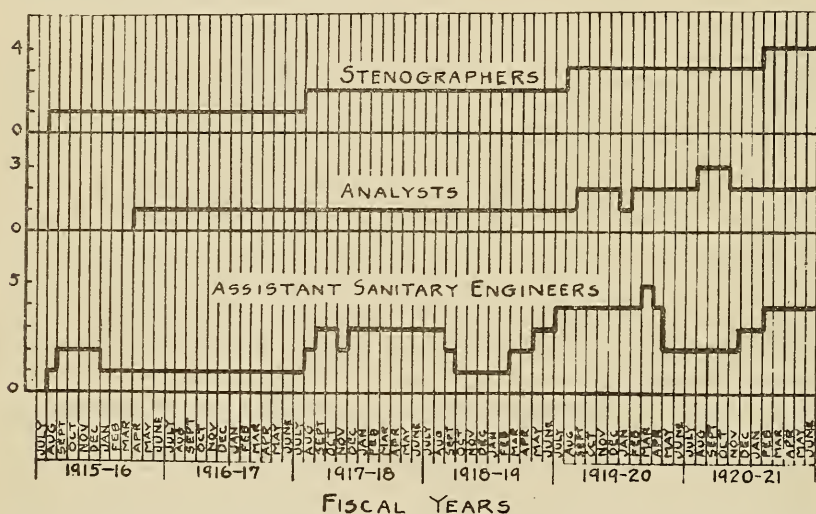


Figure XIII—Diagram showing number of technical assistants and stenographers on staff since division was established.

### PERSONNEL OF THE DIVISION.

The appropriations for the fiscal year were the same as for the preceding fiscal year since the appropriations are made by the legislature for a biennium. It has not, therefore, been possible to increase the staff over that which prevailed formerly with all positions filled, but the positions that were vacant at the beginning of the fiscal year, because of resignation of some of the assistant engineers to accept positions at

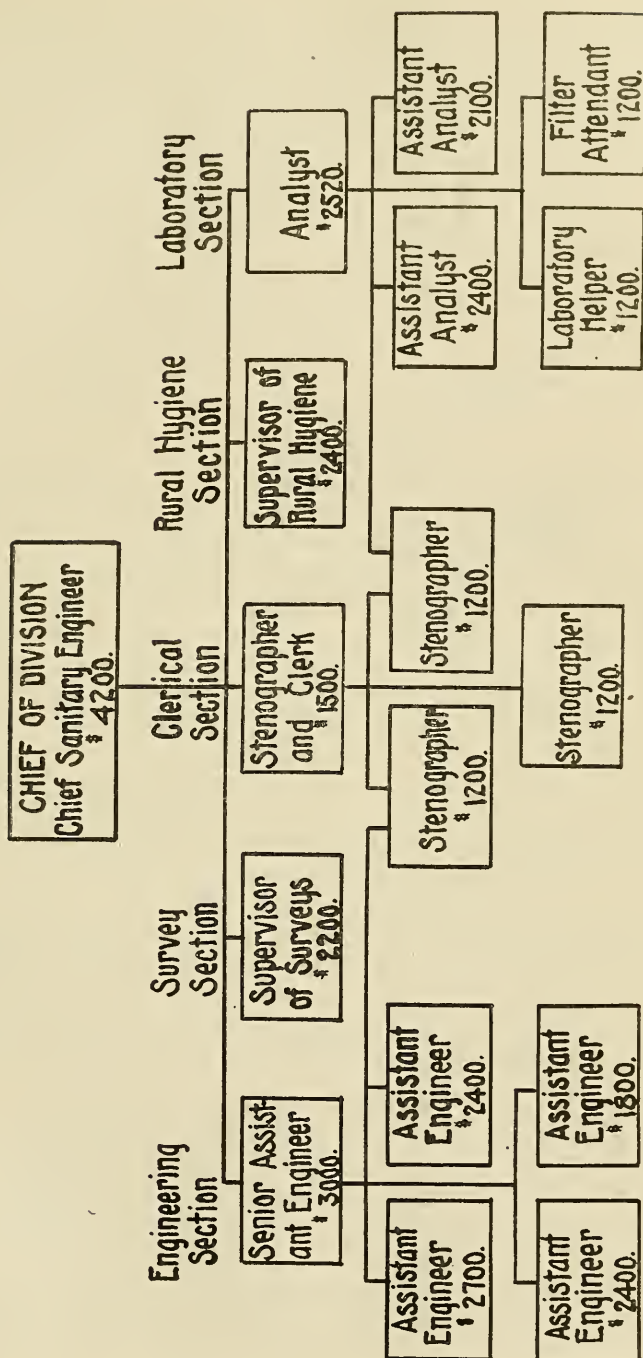


Figure XIV—Divisional organization for biennium, 1921-23.

higher salaries, have been filled. The staff, which was short three assistant engineers at the beginning of the fiscal year, comprised, at the close of the year, a chief engineer, four assistant engineers, one analyst, one assistant analyst, a laboratory helper, a water filter attendant, and four stenographers. The staff was not completed until February, 1921, and thus the division has had to handle the work with a partial staff except during the last four months. Figure XIII shows the number of assistant engineers, analysts, and stenographers on the division staff since the division was established.

With the appropriations made by the Fifty-second General Assembly (1921), which became available July 1, 1921, it will be possible to add to the staff another assistant engineer and another assistant analyst. Figure XIV shows the staff of the division for the fiscal year beginning July 1, 1921, including the two new positions soon to be filled.

#### ACTIVITIES OF THE DIVISION.

With no change in the laws or rules governing the activities of the Division of Engineering and Sanitation, the character of the work carried on has been the same as during the previous fiscal year. A classification of these activities is presented in the third annual report of the department on page 56. With only a partial staff during the first part of the fiscal year and changes in personnel, it was possible to give full attention only to the more important activities, and water-supply and sewerage problems have been given first consideration. With the addition to the staff during the closing months of the fiscal year it has been possible to carry on additional work.

As formerly, complete reports have been prepared on all investigations and examinations made. Copies of these reports are retained in the department files and can be consulted at any time and copies are sent, at the time they are prepared, to interested parties. These reports have of necessity been only typewritten, and since many of them would be of value if published it is again hoped that rather complete abstracts of the reports can at some time in the future be published and made available for greater use. The press of regular work has not so far permitted the preparation of such abstracts and, therefore, special requests for funds for editing and publishing reports have not been made.

#### WATER SUPPLIES.

First consideration is given to public water supplies, for a public water supply of good sanitary quality and adequate in quantity is undoubtedly the most important improvement in any municipality. A public water supply of questionable quality is a grave source of danger not only to residents of the city but to persons visiting the city who are not aware of its unsatisfactory quality. Assistance is given to municipalities that are installing public water supplies, improving



existing supplies, and operating waterworks systems, especially water-purification plants.

The number of field investigations made relative to public water supplies during the last three fiscal years is shown in Figure XV. The decrease in the number of assistant sanitary engineers on the staff for the first seven months of the fiscal years 1920-21, as shown in Fig. XIII, made it necessary to limit the number of investigations.

At the request of persons desiring that the waterworks in their home city be operated so as to provide a safe water at all times, a senator introduced a bill during the Fifty-second General Assembly

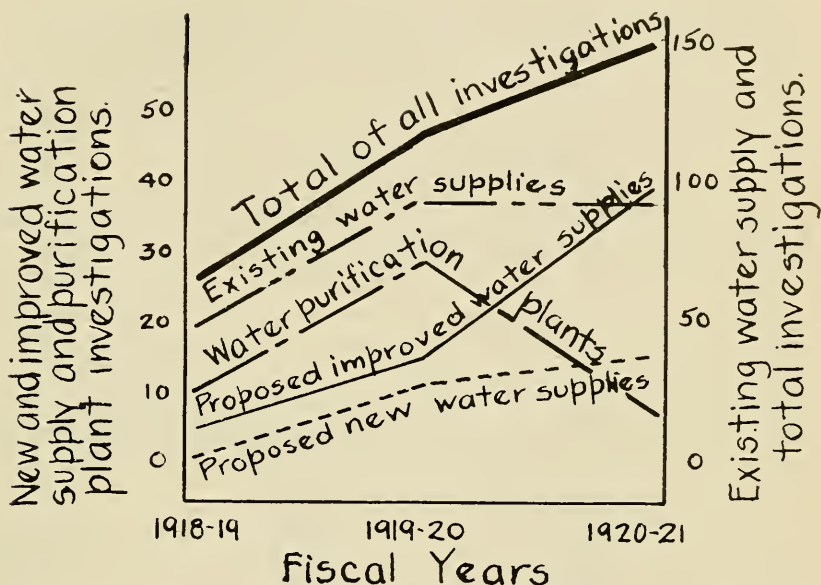


Figure XV—Number of investigations made relative to public water supplies during fiscal years 1918-19, 1919-20, and 1920-21. (See text relative to number made during 1920-21.)

that provided for the State Department of Public Health to exercise certain supervision over public water supplies. As a result of conference with representatives of the department the bill was amended to include those items found to be satisfactory in other states that had had such laws in force for a number of years. The bill passed the Senate without opposition, but unfortunately because of press of legislation it never came to a vote in the House. The activities of the division, therefore, relative to public water supplies will continue, during the coming biennium, to be the same as in the past.

#### PROPOSED NEW WATER SUPPLY PROJECTS.

The functions of the division in connection with new water supply projects are stated on page 57 of the third annual report. An import-

ant part of this work is the review of plans and specifications for proposed new water supplies. In reviewing proposed installations the division has the advantage of the studies made of all the existing public water supply installations in the State, and consequently the cities installing supplies are given the advantage of the experience gained in other municipalities.

The prevailing high price of materials tended to delay, as in the preceding fiscal year, the installation of new supplies. Several cities that gave consideration to making installations postponed action temporarily.

During the fiscal year installation of public water supplies was started at Erie, Hanover, and Wauconda, and investigations relative to proposed new water supplies were made by the division at the following places: Auburn 2; Dallas City, Divernon, Erie 2, Hanover 2, Frankfort, Newman, South Pekin 2, Wauconda 2, and Westville.

#### PROPOSED IMPROVED WATER SUPPLIES.

The increase in water consumption in a number of municipalities, caused partly by an increase in population and partly by the increased desire of people for modern sanitary conveniences, has resulted in a number of municipalities giving consideration to improved supplies. An increased public sentiment in favor of supplies of better sanitary quality and in certain instances of better mineral quality has also been a very important factor in causing a number of municipalities to give consideration to improving existing unsatisfactory supplies. The functions of the division in connection with improvement of existing unsatisfactory supplies are similar to those for proposed new supplies, and are stated on page 58 of the third annual report.

During the fiscal year 38 visits were made relative to proposed improved water supplies as compared to 15 during the preceding fiscal year. Improvements have been started or were soon to be started at practically all of the municipalities that were visited and considered improvements. The visits were made to 33 municipalities as follows:

Altamont.	Gilman.	Oswego.
Amboy.	Harvard.	Pana.
Atlanta.	Litchfield 2.	Pittsfield.
Bloomington.	Marengo.	Princeton.
Blue Mound.	Marion 2.	Red Bud.
Carbondale.	Mascoutah.	Robinson.
Charleston.	Mt. Morris.	Rockford.
Danville 2.	Nauvoo.	Salem.
Decatur 3.	Newton.	St. Anne.
Eureka.	North Chicago.	Streator.
Galena.	Oakland.	West Frankfort.

#### EXISTING PUBLIC WATER SUPPLIES.

The examination of existing public water supply systems and the preparation of complete descriptive reports of such water-supply systems, with special reference to the adequacy and quality of the water supplies, has been continued. In the third annual report it was stated that there were about 475 public water supplies, of which the division had knowl-

edge. In this number were included the supplies at State and Federal institutions. At the present time records have been obtained of 459 municipal water supplies and of the water supplies at 28 State institutions and the 7 Federal institutions, army posts, and naval stations.

There is under preparation a report giving the names of municipalities having public water supplies, their populations, the sources of the supplies, the treatment, if the water is treated, and a record of the sanitary quality of the water as determined by field inspections and analyses of samples. This report is to be printed in Illinois Health News and made available separately as a reprint.

The department does not have authority to require that water supplies be made of safe sanitary quality such as is given to similar departments in most of the other states having well-organized health departments. The division, however, is often instrumental in bringing about improvements by means of reports and recommendations submitted to municipal and waterworks officials as the result of examinations made by sanitary engineers of the division. Municipal and waterworks officials are in most cases glad to be advised of the results of the inspections and to follow any suggestions made and if the officials do not act they are plainly responsible for any sickness that may result from the use of unsafe supplies.

During the fiscal year 91 visits were made to municipalities to examine existing public water supplies in addition to those places previously listed where improvements were under consideration. This is the same number of visits made during the previous fiscal year. The places visited during the fiscal year were as follows:

Alton.	Herrin.	Palestine.
Beardstown.	Hillsboro.	Pearl.
Benton.	Hoopeston.	Petersburg 2.
Bloomington 2.	Hopedale.	Quincy 2.
Buda.	Joliet.	Rankin.
Bureau.	LaMoille.	Ransom.
Carlyle.	LeRoy.	Rantoul.
Centralia.	Lewistown.	Red Bud.
Cissna Park.	Manhattan.	Rockford 4.
Charleston.	Marion.	Roodhouse.
Chester.	Mattoon.	Rossville.
Christopher.	Maywood 2.	Sandwich.
Danville.	Menard.	Savanna.
Decatur.	Moline.	Seneca.
DeKalb.	Momence.	Shermerville.
Deerfield.	Mooseheart.	South Wilmington.
Dwight.	Mound City.	Spring Valley.
Earlville.	Mounds.	St. Charles.
East St. Louis.	Mt. Carmel.	Sterling.
Eldorado.	Mt. Carroll.	Stockton.
Elgin.	Mt. Sterling.	Summit.
Franklin Park.	Murphysboro 2.	Tuscola.
Freeport 2.	Newton.	Villa Grove.
Geneva.	Nokomis.	Villa Park.
Hamilton.	Olney.	Watseka 3.
Hanover.	Ottawa.	Winchester.

#### WATER-PURIFICATION PLANTS.

The inspection of water-purification plants which is a special phase of the examination of existing water supplies, is considered very important since improper operation of a purification plant may result in out-

breaks of sickness in a community. It was not possible at the beginning of the fiscal year to assist officials operating purification plants as much as was desired because of the limited staff, but with all positions filled at the end of the fiscal year and the increased appropriation making possible the addition of another assistant engineer and another assistant analyst to the staff, it is expected that more attention can be given to purification plants in the future and a plan adopted for regular inspections of all such plants. It will be possible to advise with the purification-plant operators and to give them the benefit of the experience gained at the other plants in the State.

During the fiscal year examinations of water-purification plants were made at Jacksonville, Marion and Salem, and of sterilization equipment only at Carlinville, Christopher and Nauvoo.

The third annual report presents in tabular form information relative to treated water supplies in the State, which table is being revised and brought up-to-date and will be published in Illinois Health News as a part of the report on public water supplies in Illinois.

#### SEWERAGE.

The advantages of a sanitary sewer system and the activities of the division in connection with proposed new, proposed improved, or existing sewerage installations are stated on page 60 of the third annual report. The work of the division in connection with such installations has continued the same as in the past, but it has not been possible to undertake as many examinations as the experience of the division would indicate would be desirable in order to maintain the best possible sanitary conditions in the State. It is hoped that during the coming fiscal year it will be possible to review and study the information already obtained by the division relative to existing sewerage installations and then to plan for systematic inspection of systems where information and records would indicate such to be desirable and probably result in improvement of sanitary conditions.

The number of investigations made relative to sewerage installations during the last three fiscal years is shown in Figure XVI. The decrease in the number of assistant sanitary engineers on the staff for the first seven months of the fiscal year 1920-21, as shown in Figure XIV accounts for the decrease in the number of investigations for the fiscal year 1920-21 as compared to those made during 1919-20.

#### PROPOSED NEW SEWER SYSTEMS.

It is easier and cheaper to have a sewer system installed properly at the start than to bring about corrections or improvements to defective systems, and full consideration is, therefore, given to proposed new installations. Plans and specifications are reviewed in accordance with the rules of the department and investigations are made relative to



proposed new installations as indicated on pages 60-62 of the third annual report.

Thirty-one visits were made relative to proposed new sewer systems as compared with 19 visits during the preceding fiscal year. The installation of several projects considered during the year has been delayed, probably in some instances because the municipalities considered

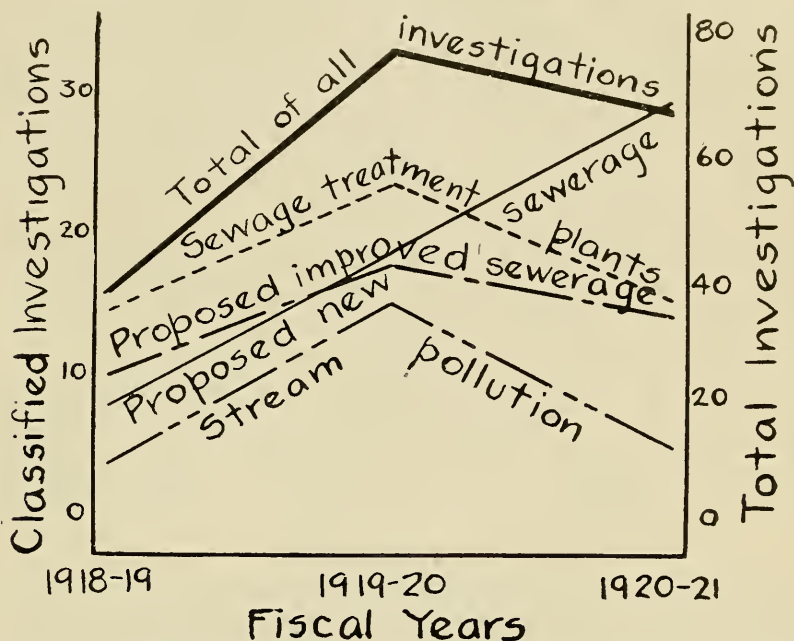


Figure XVI—Number of investigations made relative to sewerage installations during fiscal years 1918-19, 1919-20, and 1920-21. (See text relative to number made during 1920-21.)

the prevailing cost of materials still high. The municipalities visited relative to proposed sewer systems were as follows:

Amboy.	Elmhurst.**	Mound City.
Area.**	Fairbury 2.	Moweaqua.
Auburn.	Farmington 2.*	Nokomis.
Benton.	Franklin Grove.	Roodhouse.
Cary.**	Geneseo.	Sullivan.
Deerfield.	Genoa Junction, Wis.	Villa Park.
Depue.	Hanover.	Wauconda 2.
Divernon.	Maroa.	Zeigler.
Earlville.	Mascoutah.	
El Paso.	Mattoon.	

#### PROPOSED IMPROVED SEWERS.

The necessity of improving existing sewer systems to meet the increase in population in some cities and to correct difficulties caused by defective design and construction of old systems has naturally continued. The improvements to sewer systems are sometimes to provide

\* Conference in Peoria and court hearing at Lewistown.

\*\* Conference in Chicago.

improved sewerage facilities in the cities, and in other cases to eliminate local nuisances and stream pollution.

It is believed that most municipalities now installing sewer systems for the first time are giving more consideration to such installations than was generally customary a number of years ago, especially as regards the suitability of the design to meet an increase in growth. Therefore, new systems now being installed probably will not require the improvements and changes that some of the older systems, that were installed without competent engineering advice, require. In making improvements to existing systems made necessary because of faulty design or construction when the systems were installed, the municipalities in the majority of cases are taking advantage of past experience and planning the changes and additions to conform to future needs as well as to correct immediate difficulties.

A compilation of the sewer systems and sewage-treatment plants in the State has not yet been prepared from the reports and records based upon the inspections of such installations, similar to the tabulation of the water supplies, but such a tabulation is considered to be very desirable and will be undertaken as opportunity permits.

During the fiscal year 12 inspections were made relative to improved sewerage as compared to 18 during the previous fiscal year. These inspections were made at Alton, Bloomington, Decatur 2, Galva, Jacksonville, Marion,\* Mooseheart, Mt. Vernon, Quincy, Rockford,\* and Streator.

#### EXISTING SEWER SYSTEMS.

In addition to visits made relative to proposed new sewer systems or proposed improvements in existing sewer systems, visits were made to Atlanta, Palestine, and St. Charles to obtain full information relative to existing systems. Many other places must be visited before the records of the division will be complete.

#### SEWAGE-TREATMENT PLANTS.

The improper operation of sewage-treatment plants naturally has not as close relationship to the health of communities as the operation of water-treatment plants. Only in some cases would failure to operate a sewage-treatment plant greatly endanger the public health. The improper treatment of sewage, however, where local conditions show treatment to be desirable, may frequently indirectly affect the public health and generally give rise to insanitary conditions and nuisances, and the people naturally turn to health departments for relief from such objectionable conditions. The treatment or disposal of sewage, therefore, although not always a health measure is so closely interwoven with health and sanitary conditions that the question of sewage treatment can more properly be handled by the State Department of Public

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\* Conference in Chicago.

Health than any other State agency, and the department with its sanitary engineers and laboratory facilities is organized to handle such work.

In reviewing plans or making inspections relative to proposed sewerage installations full consideration is always given to whether or not a sewage-treatment plant will be necessary to prevent objectionable conditions and the amount of treatment that will be required. The functions and work of the division relative to sewage-treatment plants are stated on pages 63-64 of the third annual report.

A limited number of examinations of existing sewage-treatment plants has been possible during the fiscal year but because of the demands on the laboratory of the division for analyses of water supplies it has not been feasible to make many examinations combining field inspections and analytical determinations. Such information showing the results obtained at typical sewage-treatment plants in the State under actual operating conditions would be of value not only to the municipalities in which the plants are located but to engineers planning new installations and to the division in considering new or proposed improved installations. Further studies of sewage-treatment plants are, therefore, contemplated by the division.

During the fiscal year 16 examinations were made of sewage-treatment plants as compared with 24 during the previous fiscal year. These examinations were made at the following places:

Antioch.	Champaign.	Olney.
Bushnell.	Downers Grove.	Palestine 2.
Bloomington (McLean	Flossmoor.	Pontiac.
County Tuberculosis	Galva.	Sandwich 2.
Sanatorium).	Great Lakes 2.	Urbana.

#### STREAM POLLUTION.

The attitude of the department relative to stream pollution is indicated on page 64 of the third annual report. Stream pollution may be objectionable because of its connection with water supplies and the resultant direct effect upon public health, or because of its indirect effect upon public health, or because it simply constitutes a nuisance. Possibly the majority of cases of stream pollution at the present time may be classified merely as nuisances, but as the population of the State increases the development of water supplies from streams increases, and the relationship between health and stream pollution increases.

The department must necessarily make examinations relative to stream pollution to protect the public health, especially when public water supplies are involved, and with its laboratory facilities and sanitary engineers it can undoubtedly handle questions of stream pollution more economically than any other State agency. A division of studies of stream pollution between State agencies depending upon whether the conditions are or are not detrimental to health would eventually result in duplication of laboratory equipment, field investigations, and valuable

data and records, thus adding to the expense to the State and at the same time possibly producing lessened benefits.

During the fiscal year investigations were made of stream pollution in addition to routine investigations of sewage-disposal plants at Apple River, Bunker Hill, Chicago Heights, Flossmoor, Lewistown, and McHenry (Pistakee Bay).

#### TREATMENT OF INDUSTRIAL WASTES AND SEWAGES.

The attitude of the department relative to the treatment of industrial wastes and sewages is indicated on page 65 of the third annual report. During the fiscal year requests to the department have resulted in investigations being made of the treatment of industrial wastes and sewages at the following places: Apple River, dairy wastes; Chicago Heights, dye wastes; East St. Louis 2, sewage wastes; El Paso, cannery wastes; Nokomis, dairy wastes, and Sandwich, creamery wastes.

#### DRINKING-WATER SUPPLIES FOR COMMON CARRIERS.

The cooperative arrangement between the State Department of Public Health and the U. S. Public Health Service, perfected during the latter part of 1918, for the examination of water supplies used on interstate carriers has been continued. The method of carrying on this work is stated on pages 65-66 of the third annual report.

There are 173 common-carrier watering points now in use in 87 municipalities in the State. During the fiscal year 53 places in which one or more watering points were located were inspected and 995 samples were analyzed. The watering points examined during the year are located at the following places:

Alton 3*.	Freeport 3.	Rankin 1.
Eloomington 2.	Galena 1.	Rantoul 1.
Bluffs 1.	Golconda 1.	Rockford 4*.
Buda 1.	Harvard 1.	Roodhouse 1.
Bureau 1.	Jacksonville 1.	Rossville 1.
Centralia 2.	Joliet 3.	Salem 1.
Champaign 3*.	LeRoy 1.	Savanna 2.
Chicago 29*(2).	Mattoon 2.	Seneca 1.
Cissna Park 1.	Mendota 1.	Shawneetown 2.
Clinton 1.	Momence 1.	Springfield 6 (2).
Danville 4.	Mt. Carmel 1.	Spring Valley 1.
Decatur 5*(2).	Murphysboro 2.	Staunton 1.
DeKalb 1.	Ottawa 1.	Sterling 1.
Dwight 1.	Pana 1.	Streator 2.
East Stockton 1.	Pinckneyville 1.	Thebes 1.
Effingham 2.	Pittsfield 1.	Villa Grove 1.
Eldred 1.	Quincy 2.	Watseka 1.
Flora 1.	Ramsey 1.	

The following list shows the common-carrier water supplies certified, provisionally certified, or condemned during the fiscal year:

\* Entire number of watering points not inspected.

Number in parenthesis indicates number of times places were visited, and number not in parenthesis indicates number of railroad watering points.



## CERTIFIED.

Beardstown.	Effingham (2).	Ottawa.
Belleville.	Flora (b).	Pana (a2).
Bement (b2).	Forrest (b).	Pekin.
Bloomington.	Freeport.	Peoria (2).
Bureau.	Galena.	Quincy.
Bush (c).	Galesburg.	Rankin (b1).
Cairo.	Golconda (e).	Rockford (b).
Champaign (2).	Harvard (b).	Roodhouse (b).
Champaign (b*2).	Havana.	Rossville.
Chicago (1).	Highwood.	Salem (d).
Cissna Park.	Hume (a).	Shawneetown (a1-2).
Clinton.	Kankakee.	Shawneetown (b2).
Cypress (a).	Kempton.	Spring Valley.
Decatur.	Mattoon (2).	Streator.
DeKalb.	Mendota.	Taylorville (b).
Dupo (f).	Momence.	Toluca.
Dwight.	Mt. Vernon.	Urbana (2).
East St. Louis (2).	Murphysboro.	Villa Grove.

## PROVISIONAL CERTIFICATION.

Alton.	Eldred (a).	Rankin (b1).
Anna.	Granville (a).	Shawneetown (a1).
Bluffs (a).	Jacksonville (f).	Staunton (b2).
Carbondale.	Mt. Carmel.	Sterling.
Chicago (1).	Mounds.	Thebes (a).
Chillicothe (b).	Pittsfield (a).	Thebes (b).
Danville.	Ramsey (a).	

## CONDEMNED.

Pinckneyville.	Thebes (a).
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NOTE.—Water from public supply unless otherwise noted. a=private well. b=railroad well. c=condensed steam. d=distilled water. e=cistern. f=tank cars filled at other points. \*=two different supplies. 1=certified after necessary changes or additional information. 2=supply certified twice during fiscal year. Chicago includes certificates issued for 27 roads, including one where changes in method of handling were made.

## SANITARY SURVEYS.

During the fiscal year the division made studies at Quincy, as a part of a sanitary survey conducted by the Division of Surveys and Rural Hygiene, of the water supply, sewerage and general drainage conditions, street-cleaning practice, collection and disposal of municipal wastes, and general sanitary conditions.

The Fifty-second General Assembly in making appropriations for the present biennium has eliminated the Division of Surveys and Rural Hygiene, but has continued the appropriations for this work and provided for a supervisor of surveys and a supervisor of rural hygiene to be a part of the Division of Engineering and Sanitation. It is considered that this will be a more advantageous arrangement inasmuch as rural sanitation involves primarily the question of water supplies and sewage disposal and other sanitary matters dealt with by this division, and surveys in municipalities in addition to studies of vital statistic records largely comprise activities of the Division of Engineering and Sanitation.

## MUNICIPAL PLUMBING ORDINANCE.

The suggestive plumbing ordinance prepared in 1917, in accordance with section 5 of an act providing for the licensing of plumbers,

in force June 29, 1917, has been furnished municipalities and individuals upon request. Copies of most of the plumbing ordinances in the State were obtained preparatory to making a revision of the suggestive plumbing ordinance, but other work has so far not permitted such revision.

#### NUISANCE COMPLAINTS.

The authority of the department relative to nuisances and its policy in handling nuisance complaints are indicated on page 69 of the third annual report. During the fiscal year 518 letters were written relative to nuisance complaints as compared with 320 the preceding fiscal year. This indicates a marked increase in interest in sanitary conditions in the State. The complaints covered a wide variety of subjects and are listed in the following tabulation:

Alleged cause of nuisance.	Number of complaints.
Impure water supplies.....	4
Polluted wells .....	5
Insanitary cistern .....	1
Mine wash-water .....	1
Sewers .....	22
Defective sewerage .....	3
Sewage disposal .....	25
Cesspools .....	12
Privies .....	40
Toilet facilities .....	6
Defective drainage .....	44
Obstruction of water course.....	1
Ditch pollution .....	8
Stream pollution .....	2
Defective plumbing .....	3
Sink wastes .....	2
Human excreta .....	2
Dairy wastes .....	2
Condensory wastes .....	1
Corn wastes from silo.....	1
Cider press refuse.....	2
Insanitary buildings and dwellings.....	17
Insanitary restaurants and hotels.....	41
Insanitary factories .....	1
Insanitary schools .....	3
Insanitary mining camps.....	2
Insanitary railroad washhouse.....	1
Stables and barns.....	22
Manure .....	17
Hog pens .....	56
Chicken yards .....	7
Dog kennel .....	1
Zoo .....	2
Stock yards .....	17
Slaughter houses .....	13
Poultry houses .....	11
Meat markets .....	8
Rendering works .....	1
Fertilizer plant .....	3
Carcasses .....	16
Garbage and filth.....	22
Dumps .....	12
Weeds .....	2
Screens .....	2
Fire hazards .....	3
Dust, smoke and fumes.....	11
General insanitary conditions.....	40

Total ..... 518

Some of the complaints involved conditions that required investigation, in many instances to confer with local health officials to whom

generally complaints are referred. During the fiscal year the following places were visited relative to nuisance investigations:

Place.	Cause of nuisance.
Beardstown .....	General insanitary conditions.
Bureau .....	Sewage disposal.
Caseyville .....	Garbage disposal.
Chicago Heights .....	Defective sewerage.
Collinsville .....	Garbage disposal.
Cowden .....	Inadequate drainage.
Cutler .....	Insanitary mine wash-water.
East St. Louis .....	Insanitary railroad shops.
East St. Louis .....	Garbage disposal.
Effingham .....	Dairy wastes.
Evanston .....	Garbage disposal.
Glenview .....	Defective sewerage.
Grafton .....	Fumes from charcoal plant.
Harrisburg .....	Defective sewerage.
Joliet .....	Inadequate drainage.
Kankakee .....	Fertilizer plant.
LaGrange .....	Defective sewerage.
Lincoln .....	Corn wastes from silo.
Manhattan .....	Inadequate sewerage.
Mt. Carroll .....	Inadequate sewerage facilities.
Okawville .....	Sewage disposal at hotel.
Pearl .....	Hogs.
Pontiac .....	Meat market.
Quincy .....	Garbage disposal.
Robinson .....	Slaughter house.
Salem .....	Insanitary conditions.
Sesser .....	Inadequate drainage.
St. Charles .....	General insanitary conditions.
Zion City .....	Inadequate sewerage facilities.

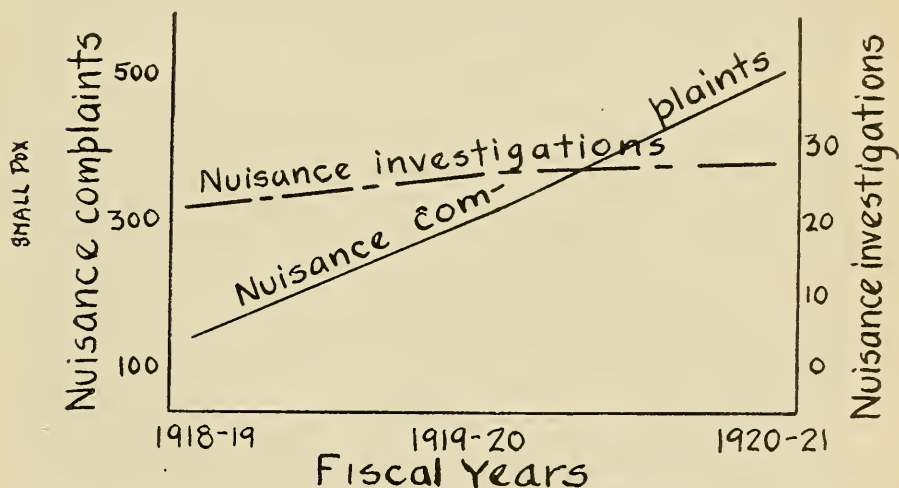


Figure XVII—Number of complaints received and investigations made relative to nuisances during the fiscal years 1918-19, 1919-20, and 1920-21.

The number of complaints of nuisances received and the number of field investigations made during the last three fiscal years are shown in Figure XVII. The number of investigations made has not increased in accordance with the increase in number of complaints received because of the method of handling complaints by correspondence with local health officials whenever possible.

## WATER-BORNE EPIDEMICS.

During the fiscal year the epidemic of dysentery at Maywood caused by temporary pollution of the public water supply has fortunately been the only water-borne epidemic that required investigation by the division. The Maywood epidemic was caused by a cross-connection between the public water supply and a polluted industrial supply.

During the year the division has been responsible for the elimination of such cross-connections at several places and the chief sanitary engineer of the division has been a member of the committee of the State Sanitary Engineer's Association on cross-connections. The report of the committee will soon be made public.

Prevention of possible epidemics in this manner is naturally better health work than having to investigate epidemics. When inspecting public water supply systems effort is made to ascertain the existence of any dangerous cross-connections and to have the responsible officials have such eliminated. This brings out the fact that there are no material or spectacular things to show for some of the best work done by a health department. Elimination of cross-connections undoubtedly prevents epidemics, but the average person does not hear of or does not realize the value of such work, whereas help in the suppression of an epidemic always attracts popular attention.

## TUBERCULOSIS SANATORIA.

The division cooperates with the Division of Tuberculosis in the examination of sites and the review of plans for county tuberculosis sanatoria, which sites and plans, according to the State law, must have the approval of the State Department of Public Health. The work of this division in this connection relates to water supplies, disposal of sewage, general drainage, and general sanitary conditions of surroundings. In some instances the availability of public water supplies and sewer systems makes the problem a rather easy one, but in other instances separate water supplies must be developed and suitable means provided for disposal of the sewage.

During the fiscal year investigations were made in connection with county tuberculosis sanatoria for DeKalb, Kane, McDonough, and Tazewell Counties.

## SANITARY INSPECTIONS OF SCHOOLS.

An outline of the character of sanitary inspections of schools made by the division is given on page 71 of the third annual report. During the fiscal year sanitary inspections have been made of schools at Camargo, Carmi, Crescent City, Equality, Livingston, Manteno, Newman, Pontiac, Ray, and Serena.

## MUNICIPAL WASTE COLLECTION AND DISPOSAL.

Studies of municipal waste collection and disposal and street cleaning, which are important phases of sanitary engineering but possibly



less important from the standpoint of public health than the question of public water supplies and sewerage, have been limited because of the amount of water supply and sewerage work that the division has been called upon to handle. During the fiscal year limited studies were made of municipal waste collection and disposal at Evanston and Quincy.

More work of this character is desirable not in order to regulate such work in the municipalities but rather to assemble the results obtained in municipalities in Illinois and to better advise with municipalities in regard to the methods used and the results obtained elsewhere. Municipal waste collection and disposal has been given careful and systematic consideration in but few municipalities, but there is a tendency for a desire for more thorough collection of wastes and cleaner conditions in municipalities and work of this nature will become more important in coming years.

#### MALARIA CONTROL BY MOSQUITO ERADICATION.

Other work has not permitted the division to initiate work in connection with mosquito eradication, although records continue to show that malaria is quite a prevalent disease in certain parts of Illinois. It is still hoped that a mosquito eradication campaign may be instituted at some place in Illinois not only to decrease malaria at that place, but to serve as an example to other communities of what can be accomplished by intelligent and systematic effort.

During the fiscal year an investigation was made relative to the prevalence of mosquitoes at Mounds, but it was found that the local pond of which complaint had been made was only a small contributory factor in the prevalence of mosquitoes in that district and that improvement of the pond would not give noticeable results unless other areas were also improved.

#### INSPECTION OF SUMMER RESORTS.

With the decreased staff at the beginning of the fiscal year it was not possible to make the studies of water supply, sewerage, and general sanitary conditions at the different summer resorts. It is again hoped that preceding and during the next season such work will be possible.

#### SWIMMING POOLS AND BATHING PLACES.

During the preceding fiscal year circular letters were sent out to obtain knowledge of the existence of swimming pools in the State and preliminary information relative to such pools and additional circular letters and questionnaire blanks were sent out during the fiscal year. A large number of replies were received and this information was utilized in the report of the Committee on Bathing Places of the American Public Health Association, of which the chief sanitary engineer of the division is a member. With the additional analytical assistance it is hoped that it will be possible during the coming fiscal year to study at least a few of the representative pools, especially to note the operation and success of different types of sterilizing plants.

## LABORATORY SERVICE.

The service that the laboratories of the Division of Engineering and Sanitation is prepared to give and the character of the work handled are stated on pages 73-75 of the third annual report.

During the fiscal year a total of 2,494 samples were analyzed which is an increase of 57 per cent over the preceding year. The requests for analyses have been so great that it has been necessary at times to delay reporting the results, which delays are undoubtedly an annoyance to persons desiring the analyses and much regretted by the division. With the increased appropriations made by the Fifty-second General Assembly permitting the employment of an additional analyst it will be possible in the future to make more analyses and report results more promptly, although even with the additional analyst it will not be possible to make as frequent analyses of many of the public water supplies as would be desirable and studies by the division, involving a large amount of analytical work will, of course, have to be limited to provide for meeting the demands for routine analyses. In order to help meet the demands for analyses it has been necessary during the year to assign at times one of the assistant engineers to help in the laboratory.

The analyses made during the fiscal year classified by source and by months, are shown in the first of the following tables, and the analyses made since the laboratory work was started, classified by months, years, and major sources, are shown in the two other following tables and in Figures XVIII and XIX. The increase in the number of analyses made during the fiscal year as compared to preceding fiscal years has been possible because of having an extra assistant analyst for three months (see Figure XIV) and assigning one of the assistant sanitary engineers to help in the laboratory at times.

ANALYSES MADE DURING THE FISCAL YEAR JULY 1920-JUNE 1921—CLASSIFIED AS TO SOURCE AND BY MONTHS.

Month.	Supplies used on common carriers.		Other public supplies.	Private wells.*			**Mis-cellaneous.	Totals.
	Public supplies.	Private wells and other sources.		Safe.	Safe with alterations.	Unsafe.		
July.....	62	16	59	8	14	18	11	188
August.....	56	24	47	13	25	32	7	204
September.....	76	10	75	2	26	17	2	208
October.....	75	22	50	11	20	39	3	220
November.....	68	5	61	5	14	21	201	375
December.....	78	18	65	3	20	8	-----	192
January.....	72	33	35	11	19	5	-----	175
February.....	52	14	40	11	9	9	14	149
March.....	86	16	66	7	14	5	13	207
April.....	49	23	33	6	13	8	5	137
May.....	59	8	83	2	30	27	5	214
June.....	56	17	65	4	29	37	17	225
Totals.....	789	206	679	83	233	226	278	2,494

\*Includes school wells, semi-public wells and cisterns.

\*\*Includes analyses of sewages, ice, bottled waters and chemicals.

ANALYSES MADE SINCE LABORATORY STARTED APRIL 17, 1917—  
CLASSIFIED BY MONTHS.

Month.	1917	1918	1919	1920	1921	Total.
January.....	-----	20	14	66	175	275
February.....	-----	27	9	102	149	287
March.....	-----	37	23	159	207	426
April.....	11	18	35	111	137	312
May.....	15	23	73	167	214	492
June.....	9	36	70	181	225	521
July.....	6	54	100	188	-----	348
August.....	31	62	126	204	-----	423
September.....	14	23	160	208	-----	405
October.....	11	23	198	220	-----	452
November.....	11	7	155	375	-----	548
December.....	11	17	58	192	-----	278
Totals.....	119	347	1,021	2,173	*1,107	4,767

\* Represents only six months of year 1921.

ANALYSES MADE SINCE LABORATORY STARTED APRIL 17, 1917—CLASSIFIED  
AS TO MAJOR SOURCES BY FISCAL YEARS.

Year.	Public water supplies (1).	Common carrier water supplies (2).	Private water supplies (3).	Sewages, trade wastes and miscella- neous.	Total.*
1917*.....	31	-----	2	2	**35
1917-18.....	125	-----	67	53	245
1918-19.....	186	117	186	17	410
1919-20.....	853	693	484	85	1,583
1920-21.....	1,468	995	542	278	2,494
Total.....	2,663	1,805	1,281	435	4,767

(1)—Including analyses made for common carriers.

(2)—Includes both public and private supplies used by common carriers. This work started August, 1918.

(3)—Includes school wells, semi-public wells and cisterns.

\* Totals show correct total number of analyses, for certain public water supplies have been listed in both columns (1) and (2).

\*\* From April 17, 1917 to June 30, 1917.

## STATE HOUSE DRINKING WATER SUPPLY.

The record of the installation of pressure filters to remove the turbidity caused by iron in the Springfield public water supply which is used at the State Capitol Building is given in second and third annual reports, pages 73 and 75 respectively.

During the fiscal year 13,163 bottles of water were filled and distributed to drinking water stands throughout the Capitol Building and buildings in the vicinity used by State officers. This number compares with 10,403 bottles filled and distributed during 1919-20 and 12,961 filled during 1918-19. Whether or not the legislature is in session materially affects the number of bottles used.

## EDUCATIONAL WORK.

The educational work of the division consists of preparation of articles for publication in periodicals, bulletins, and newspapers, the

making of public addresses on sanitary engineering and miscellaneous sanitary subjects, and preparation of an exhibit as a part of the exhibit of the department for the State and county fairs and local exhibits.

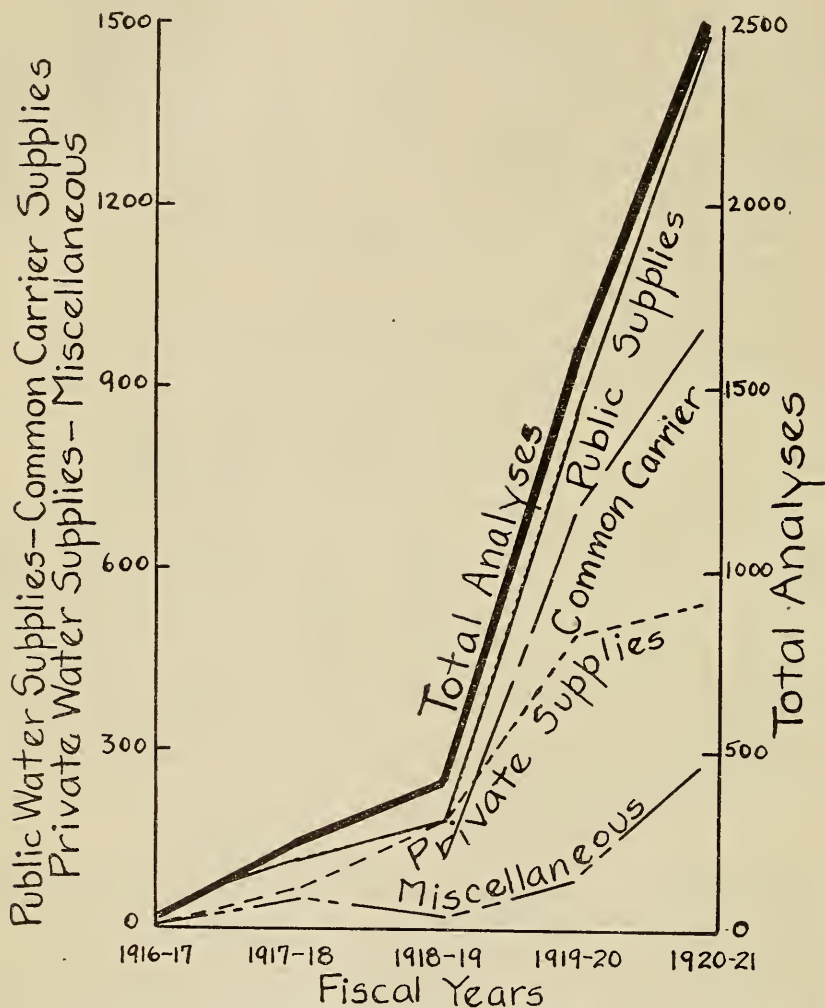


Figure XVIII—Number of analyses made each fiscal year since laboratories of division were established April, 1917.

Articles for publication must be such as to attract the interest of persons reading the respective publications and articles for newspapers must, of course, be somewhat brief and have news value. The majority of the lengthy articles have been prepared for publication in the monthly Health News issued by the department. Many of the articles for Health News are of value for permanent reference and reprints of such articles



are made so as to be available for sending out in answer to requests for information.

A considerable amount of educational work is carried on by means of correspondence. Many letters are received requesting information relative to proper construction of wells, septic tanks, small sewerage installations, and general sanitary matters. In answering letters of complaint relative to nuisances, opportunity is given to do educational work along sanitary lines.

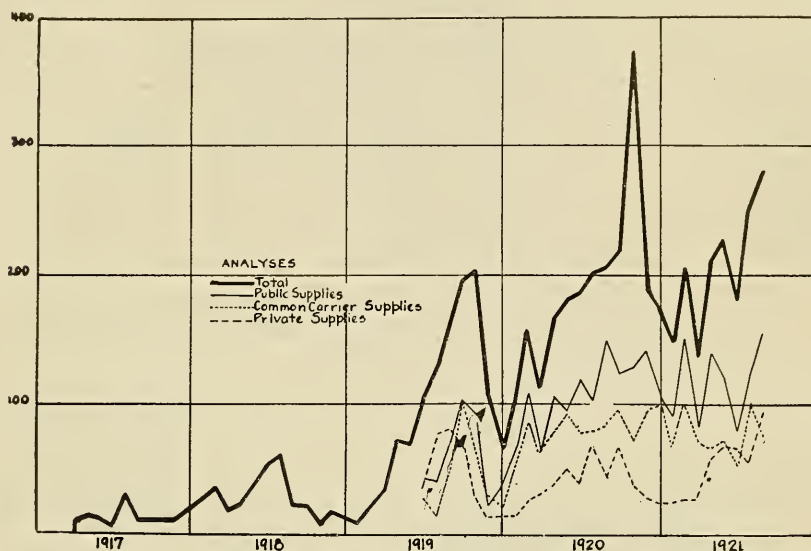


Figure XIX—Number of analyses made monthly since laboratories of division were established April, 1917.

Public addresses have been confined largely to informal talks before city councils, chambers of commerce, or other civic associations relative to water supply and sewerage projects and general sanitary improvements. During the fiscal year the following places were visited to give talks in addition to places where talks may have been given in connection with water supply or sewerage projects:

Place.	Subject.
Galva .....	Improved sewerage.
Mackinaw .....	Address at county tuberculosis sanatorium.
Mt. Vernon .....	Improved sewerage.
Pana .....	Emergency and improved water supply.
Princeton .....	Sanitation and sanitary ordinance.
Streator .....	Proposed improved sewerage.
Sullivan .....	Sewerage and water supply.

Meetings of the Illinois Society of Engineers, Illinois Section of the American Water Works Association, American Medical Association, American Society of Bacteriologists, and the Illinois Tuberculosis Association, and the Chicago Health Exhibit, under the auspices of the Chicago Health Department, were attended.

## MISCELLANEOUS INVESTIGATIONS.

In addition to the places listed in preceding tabulations, miscellaneous investigations have been made at the following places for the purposes indicated:

Place.	Purpose of visit.
Auburn .....	Private well pollution.
Bushnell .....	Hotel inspection.
Carbondale .....	Swimming pool at park.
Centralia .....	Sanitary conditions at roundhouse.
Champaign .....	Sewage experiment station.
Cherry .....	Mine wash-water.
Clinton .....	School plumbing.
Creal Springs .....	Bottled water.
Danville 2 .....	Hearing on water rates.
Johnston City .....	Sanitary inspection of coal camp.
Joliet .....	Water supply at Camp Harlowarden, Cherry Hill.
Lewistown .....	Inspection of Depler Springs.
Louisville .....	Hotel inspection.
McHenry .....	Pollution of Pistakee Bay.
Mooseheart .....	Plumbing and general sanitary conditions.
Nashville .....	Mine wash-water.
Okawville .....	Water supply Washington Mineral Springs.
Pocahontas .....	Mine wash-water.
Princeton .....	Sanitary ordinance.
Sandwich .....	School ventilation.
Smithfield .....	School well.
Tamms .....	Hotel sanitation.
Toledo .....	Sanitary ordinance.

## SUMMARY OF ACTIVITIES FOR FISCAL YEAR.

The visits made and work done by the division are summarized in the following tabulation:

	1919-20	1920-21
Visits made and reports prepared relative to—		
Water supplies (total).....	200	203
General inspection of existing public water supplies.....	91	91
Proposed new public water supplies.....	11	15
Proposed improved public water supplies.....	15	38
Water purification.....	*	6
Drinking water supplies for railroad trains.....	83	53
Public sewerage installations (total).....	61	62
General inspection of sewer systems.....	**	3
Proposed new sewer systems.....	19	31
Proposed improved sewer systems.....	18	12
Sewage-treatment plants.....	24	16
Stream pollution.....	16	6
Treatment of industrial wastes and sewages.....	9	7
Sanitary surveys.....	3	1
Nuisances.....	27	29
Water-borne epidemics.....	6	1
Tuberculosis sanatoria.....	4	4
School sanitation.....	11	10
Miscellaneous subjects.....	15	27
Samples of water, sewage, trade wastes, etc., analyzed.....	1,583	2,494
Talks and addresses given and association meetings attended.....	14	13
Letters written (approximately).....	3,200	4,800

\* Not recorded separately from general inspection of public water supplies in 1919-20.

\*\* Not recorded separately from talks and addresses in 1919-20.

## RECOMMENDATIONS FOR FUTURE WORK.

The third annual report called attention to the limited funds available for the division and consequently the small staff that could be engaged to carry on the work required. The small increase in appropriations made by the Fifty-second General Assembly, which became available

July 1, 1921, will make it possible to add to the staff an assistant engineer and an assistant analyst and also, it is hoped, to retain in service the present members of the staff. It will, therefore, be possible beginning with July 1, 1921, to carry on work more thoroughly than during the past two fiscal years but the staff will still be too limited to carry on intensively all of the activities enumerated on page 56 of the third annual report.

A staff to properly meet the needs and requests for sanitary engineering work in Illinois at the present time should include, in addition to the chief sanitary engineer, at least three assistant sanitary engineers for public water supply work, two assistant sanitary engineers for sewerage work including stream pollution, an assistant sanitary engineer for common carrier water supply investigations and investigations of summer resorts, an assistant sanitary engineer for sanitary inspections of school houses and general sanitary conditions, an assistant sanitary engineer for making investigations and studies of city wastes collection and disposal including street cleaning, an assistant sanitary engineer for work in connection with malaria control by mosquito eradication who would also be available for making other inspections, two assistant sanitary engineers to prepare maps, drawings, and assist in the office, five analysts, and seven or eight stenographers and clerks.

The division is accumulating a considerable amount of information relative to water supplies and sewerage that would be of interest and value to engineers, city and water works officials, and others and, therefore, it would be beneficial to the State if funds were made available for preparation of this material for publication.

There still continues duplication by different State agencies in sanitary work which not only causes extra expense to the State, but at times is confusing to persons for whom work is being done. There is no question but that all State work in connection with sanitary control of public water supplies should be handled by the State Department of Public Health which would include both field investigations and analytical work. This duplication in field work and also in making analyses, in addition to the extra expense to the State and the confusion sometimes caused to city and water works officials and others, has at times delayed the bringing about of improved sanitary and health conditions.

At the present time there are different State agencies which are interested in or do work relative to stream pollution. Stream pollution is largely a sanitary engineering problem and naturally the State Department of Public Health must make studies relative to stream pollution because public health is frequently concerned, especially when such pollution affects public water supplies.

Stream pollution is closely interwoven with sewer systems and on that account also directly or indirectly becomes a public health matter.

The Department of Public Health is instrumental in many cases in the installation of sanitary sewer systems, and because of its close association in such work it can most economically see that sewer systems are properly planned, not only to provide adequate sewerage facilities within communities, but to prevent objectionable stream pollution.

The department with its laboratories and staff of sanitary engineers is prepared to, and naturally must, handle stream pollution work when it relates to public health and it would be the most economical and satisfactory plan to require that the State Department of Public Health do all work in connection with stream pollution. This would minimize the amount of field work and analytical work and consolidate records and information of the sanitary conditions of streams in the State in a single department.

It is not feasible or desirable for the Department of Public Health to neglect entirely stream pollution investigations because of their relationship to public water supplies, but it would be feasible for any other State agency to discontinue making stream pollution investigations, for when made by other State agencies it is because a nuisance exists and the conditions do not closely relate to any other work that the other State agencies are authorized to handle.

A bill that was introduced in the Senate at the Fifty-second General Assembly (not at the request of the department), as amended, would have clarified the powers of the State Department of Public Health relative to water supply and sewerage installations, and eventually resulted in less duplication of work by other State agencies. This bill passed the Senate but unfortunately because of press of legislation did not come to a vote in the House. The bill was quite similar to laws in force in Wisconsin, Ohio, Pennsylvania, Maryland, and many other states which are in advance of Illinois as regards sanitary legislation of this kind.

If it does not seem feasible to delegate to the Department of Public Health entire jurisdiction over stream pollution, the next best solution would be the creation of a stream pollution board to be made up of the chief sanitary engineer of the State Department of Public Health, the superintendent of waterways of the Department of Public Works and Buildings, and the chief of the Division of Fish and Game of the Department of Agriculture. Members of this board would not receive additional compensation. For the economical handling of the stream pollution investigations including analytical work, the Division of Engineering and Sanitation of the State Department of Public Health would be authorized and required to make all field investigations, obtain necessary plans, maps, etc., and to do all analytical work, and then the information obtained would be considered by the board. When the pollution was found detrimental to health the power to act would be delegated entirely to the Department of Public Health; when found



only detrimental to fish life, the board would act in conformance with the request of the Division of Fish and Game; and when the pollution was merely a matter of nuisance, the board would take direct action.

The demands upon the department for assistance in improving water supplies and regulating both proposed and existing supplies are so important that it is hoped that at the Fifty-third General Assembly a bill similar to the one introduced during the Fifty-second General Assembly will be introduced and passed.

## DIVISION OF VITAL STATISTICS.

SHELDON L. HOWARD, *Registrar.*

In 1917 the Division of Vital Statistics was created under the Civil Administrative Code for the purpose of enforcing the model birth and death registration act that was placed upon the statute books in 1915. Since that time the organization of the division has grown from a force of seven employees to a personnel of twenty-four, with duties and functions as expressed in the organization chart, Figure XX. The scope of work carried out by the division was correspondingly increased, so that the close of the fiscal year, July 1, 1920-June 30, 1921, finds the vital records of the State in better condition and more comparable with those of other states than at any previous time in the history of Illinois.

When the division was organized two important objects were outlined in its policy. These were to gain admission into the United States Registration Area for deaths and births. The first of these was accomplished in 1918, and while the second has not yet been realized, such material improvement in the completeness and character of birth reports has been observed during the last fiscal year that the future seems full of hope and promise that the time is near at hand when Illinois will be recognized by the Federal Bureau of the Census as one of the registration states.

During the year more vigorous measures have been employed to bring about complete and accurate birth registration than the department has ever been able to institute before. Based upon past experiences these and other divisional activities have been carried out along the lines discussed under the various sections into which this report is divided.

### VIOLATIONS.

The policy of past years in listing all reports of violations of the State law from local registrars and other sources for the subject of investigations either by field agents or correspondence has been continued. Careful records of all files are kept with special attention to cases of individuals who persistently and flagrantly fail in observing the law. These records are kept in convenient form for constant reference and for the use of the Director of the State Department of Public Health.

A list of violations for each month is prepared in quadruplicate so that copies may be placed in the hands of the Director and working copies maintained in the division for the use of the registrar, the assistant registrar and file clerks. The average number of violations per month

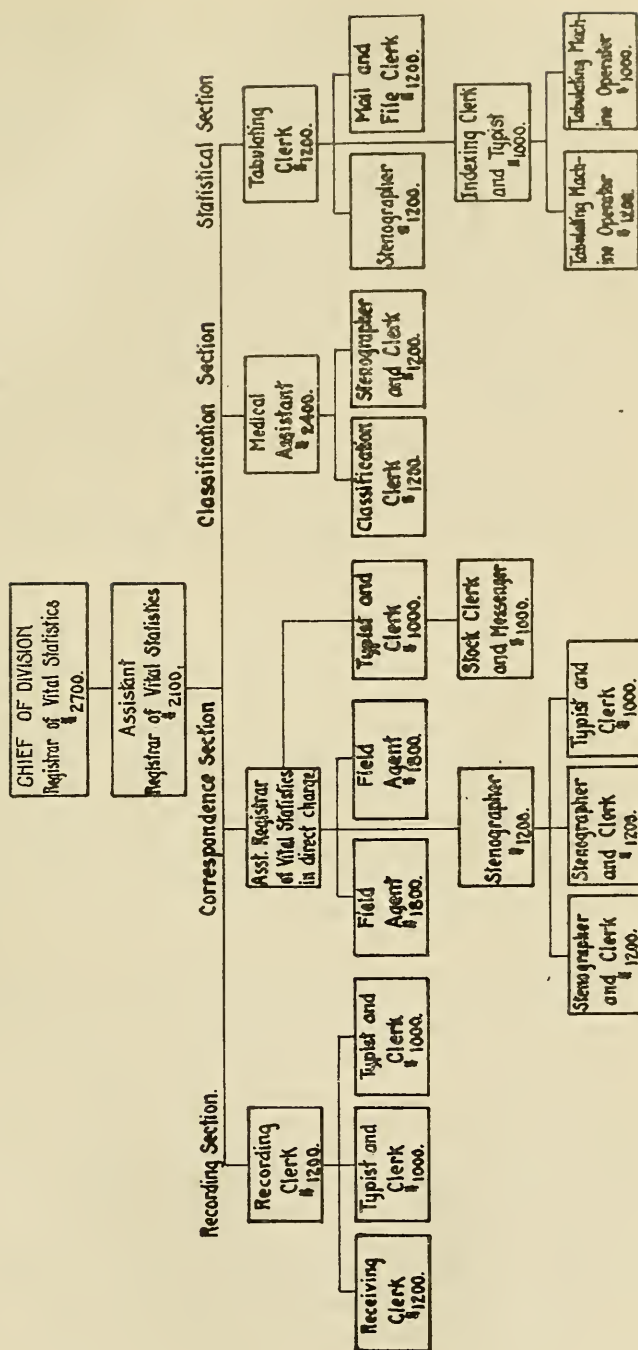


Figure XX—Divisional Organization for Biennium, 1921-23.

during the fiscal year that ended June 30, 1921, was 52 compared with 53 for the preceding year, so that the work of the assistant registrar and several of the field agents devoted to making investigations of violations, has been continued. Incidentally, whenever field agents are delegated to investigate violations of the law, they are advised also to employ every means for giving added instruction to local registrars, and in the investigation of complaints they are instructed to weigh all cases with respect to the qualifications of the registrar and the question of wilful violations.

During the year it became apparent that a large number of undertakers have habitually disregarded the law in regard to obtaining permits for burial and for disinterment and removal of bodies. To overcome this situation the division has communicated with the sextons throughout the State and has sought and obtained in a gratifying measure their cooperation in compelling undertakers to obtain proper official credentials. This is an easy matter on the part of the sexton since he can refuse burial until those in charge of burials present to him certificates properly executed. It is felt that the accomplishment of this piece of work has placed death registration upon a basis of a maximum degree of completeness.

#### DELINQUENTS.

Delinquent registrars, especially as their work relates to birth reports, have been the source of many and perplexing problems. One means after another has been employed to solve these problems with the result that a gradual improvement in the promptness with which birth reports are received and in the decrease of the number of delinquent registrars, has been noted. In addition to the usual procedure of immediately notifying all delinquent registrars at the end of each month, the division carried out a special campaign during the early months of the fiscal year and cleared up 221 out of 354 serious situations where reports had been incomplete or totally lacking for the six preceding months.

Lists of delinquent registrars are prepared for the information of the Director of the department at the end of each month, and additional copies of these lists are made for the information of the registrar, his assistant and the several field agents. During the fiscal year a monthly average of 283 delinquencies on the part of local registrars or 19 per cent of the total number of registrars were recorded. This corresponds very favorably with a monthly average of 340 delinquencies or 22.7 per cent of the total number of local registrars for the preceding fiscal year.

The complete investigation of a large number of cases of delinquency has brought to light the fact that many such cases result from the change in local registrars because of election, or by the removal of registrars (and these without the knowledge of the department) to other communities. This situation gives rise to the induction into office of new men who are not familiar with the law and the rules and regulations of



the department and who, therefore, innocently violate the provisions thereof. Added to these situations it has been found also that many of the local registrars have come into office without proper qualifications for carrying on work as important as that required.

To overcome these difficulties and as a means of instructing every delinquent registrar as to the scope and character of his duties, a series of form letters has been designed to answer the more common questions relating to their work. Supplemental to these, field agents have been advised to call upon all delinquent registrars in their districts and give personal instructions along the lines discussed in the form letters. It has been necessary during the fiscal year to send these letters of instruction to a fewer number of local registrars than in former years. This leads to the belief that not only the local officials, but the public in general, are coming to appreciate more intelligently and to understand better the provisions of the vital statistics law.

#### REPORTS OF LOCAL REGISTRARS.

During the fiscal year a marked improvement has characterized the manner in which local registrars have made their reports to the division. The habit so common in former years of transmitting to the division birth and death certificates daily or as frequently as they were received, has been almost completely overcome and has been replaced almost uniformly by the habit of sending in the certificates on the tenth day of each month as required by law. Not only has the time of sending in reports been more satisfactory than ever before, but a very marked improvement in the character of certificates of births, stillbirths and deaths has been observed also. This improvement is attributed in a large degree to the extension of various forms of educational methods used to correct errors made by the local registrars in reporting.

Another important error, that of sending certificates intended for the county clerks to the State Department of Health, so common in former years, has been practically eliminated. This has been brought about by referring back to the registrars all copies of birth certificates that were not on the original forms, along with the form letter requesting them to supply this office with the original forms and to file the duplicates with the local county clerk.

The matter of issuing annual statements for fees due to local registrars for their services has been greatly facilitated during the year as a result of a system outlined in the third annual report, whereby a transfer of credits was made for certificates wrongly forwarded to the department by local registrars in cases where fees due for registration of births or deaths that occurred outside of their districts were claimed. This system of effecting transfers of credits has worked to the decided saving of stenographic help and to the issuing of annual statements for fees with much greater dispatch than was ever possible before.

## COMPLETION OF DEFECTIVE CERTIFICATES OF BIRTH.

While birth reports have gradually improved in character with the expansion and increased activities of the division, still a large number of those received from rural districts and small villages fail to contain important data. In many cases the name of the child is completely lacking. While a marked improvement has been noted during the year in this respect, still the department has outlined a policy in order to stimulate future improvements, whereby no certificates of registration of births will be issued to parents in cases where original reports are not complete in all particulars.

## DEFECTIVE CERTIFICATES OF DEATH.

In the third annual report of this division it was shown that approximately 10 per cent of the death certificates received by the division were defective in one or more essential details, and that it was consequently necessary to carry on extensive communication with undertakers, local registrars and physicians for the purpose of making accurate and complete death records.

During the fiscal year just ended the continuation of the same policy has brought about a considerable improvement in the character of death certificates, although the division still finds it necessary to carry on considerable work in this respect.

## MEDICAL AND OCCUPATIONAL CLASSIFICATION.

The efforts of the division to secure essential information on death certificates relative to medical classification, has borne fruit. This is demonstrated by the fact that a considerable improvement has been noted on all certificates, especially those applying to deaths from violence, casualty or undue means. Considerable difficulty still obtains, however, in reference to securing complete information relative to deaths from cancer, where it is necessary to state the primary location, and from deaths ascribed to pneumonia, broncho-pneumonia and acute nephritis, and otherwise unqualified.

Changes in the classification of deaths made by the International Conference which met in Paris last year went into effect in this State January 1, 1921. The new card gives distinctive numbers to poliomyelitis, epidemic meningitis and encephalitis lethargica, all of which are important in the administration of public health. Adoption of this new classification by the State will prove to be of decided advantage in the future study of vital statistics, since it makes them standard with National and international figures.

Since early in February, 1921, a division record has been kept of certificates which lacked medical and occupational data. During that period there were received from points outside of Chicago, 1,786 certificates that required correction in medical classification, 552 in occupational classification, and 72 in medical and occupational classification, or

a total of 2,410. During the same period a total of 16,522 certificates of death from all causes were received, so that the number for which corrections were necessary amounted to practically 16 per cent of the total.

#### REPORTS OF COMMUNICABLE DISEASES.

During the past year, as formerly, reports of deaths ascribed to reportable communicable diseases have been made daily to the Division of Communicable Diseases, while the reports of deaths attributed to venereal diseases have been reported daily to the Division of Social Hygiene.

#### REGISTRATION OF OLD BIRTH REPORTS.

A new significance that attaches to the registration of births on account of increased child labor legislation and the consequential demand for certification of births that occurred prior to the time when the present act became effective, was referred to in the third annual report. The means employed for meeting the demand for these old birth reports have been continued during the fiscal year, all local registrars being supplied with proper legal forms in all cases where these have been required. The old reports have all been properly bound and indexed, so that ready reference may be had to them at any time.

#### CORONER'S CERTIFICATES OF DEATH.

During the fiscal year many physicians throughout the State have continued the unlawful practice, referred to at length in the third annual report, of signing certificates of deaths from undue or violent means whereas all such cases are subject to a coroner's investigation and the certificates should bear his signature. The practice has resulted in considerable confusion of more or less legal moment and has been the subject for a great deal of correspondence on the part of the division in its efforts to make the necessary corrections.

In seeking the reason for the rather extensive and persistent nature of these errors many investigations have been carried out during the year. These have shown, almost without exception, that the source of error rests in the wording of instructions to physicians that appear on the standard death certificate blank. It has, therefore, seemed advisable to recommend to the United States Bureau of the Census that these instructions be altered and changed in a way to simplify and make more positive the regulations that govern coroner's cases, and such recommendation has been made. A procedure of this kind would, it is felt, bring about a solution of the problem that has presented many and complicated difficulties for a number of years.

#### DIRECTORY OF LOCAL REGISTRARS.

A complete revision of the directory and book of practical instruction of local registrars, has been made and will shortly be issued for the

use of physicians, local registrars and undertakers. It now contains full and up-to-date information necessary for the proper execution of all matters relating to birth and death registration, as well as a list of local registrars and the boundaries of districts in each case. This directory and book of instruction will be, as nearly as possible, placed in the hands of all practicing physicians in the State, outside of Chicago, and in the hands of undertakers and local registrars and district health superintendents as well.

The combination of registration districts, based upon the investigation of field agents, has continued during the past fiscal year and will continue in the future so long as it is apparent that the law can be better fulfilled. In June, 1920, there were 1,498 registration districts compared with 1,471 on June 30, 1921. These districts include 2,702 primary districts.

#### UNSATISFACTORY LOCAL REGISTRARS.

Unfortunately the recommendation of this division for certain changes in the vital statistics laws relative to the appointment and control over local registrars was not made by the Fifty-second General Assembly, and the unsatisfactory status that has prevailed in the past continues. In spite of every effort to the contrary many county clerks still fail to receive regularly complete and accurate copies of all certificates forwarded by the local registrars to the State Department of Public Health. The reasons for this and other highly unsatisfactory situations were pointed out in the third annual report and no means for improvement other than legislation have yet presented themselves. On the other hand, the division has been able to accomplish a considerable improvement in many respects (as described elsewhere in this report) through systematic methods of instruction which are made the more necessary on account of frequent changes in local registrars.

In this connection it is again urgently recommended that the vital statistic law be amended so that township clerks, as such, will be eliminated as registrars and that a provision be made whereby more convenient places for registration may be established and local registrars appointed without regard to township office and under more direct supervision of the State Department of Public Health. To this is added a recommendation for an amendment to the same law providing for local registrars to forward copies of certificates to the State registrar only, who will in turn make duplicate copies for county clerks and the Federal Bureau of the Census. In this way all prevailing difficulties connected with keeping accurate and uniform records in the county, State and Nation will be largely overcome and the matter placed on a basis that will insure complete accuracy in every detail with but slight, if any, increase in ultimate cost.



## FIELD INVESTIGATIONS.

The two field agents of the division, one of whom is on part-time employment with the Division of Social Hygiene, have been particularly active during the fiscal year, and have not only done more effective service, but have covered more territory than ever before. The scope of their work embraces: (a) surveys of hospitals and other institutions for the purpose of obtaining complete vital statistics data; (b) investigations of conditions looking to the combination of districts; (c) settlement of disagreements in the payment of fees; (d) investigations of law violations; (e) instruction and investigation of unsatisfactory local registrars; (f) conference with undertakers, physicians and local registrars in cases where other methods have failed to secure cooperation. In addition to these things, special investigations were conducted by the field agents in 40 counties to ascertain the names of physicians who persistently fail to report births with the result that 131 delinquent names were brought to light and means employed to insure more complete reporting from them in the future.

During the fiscal year the registration districts in 84 counties were visited against 64 for the preceding year. The names of the agent assigned and the counties visited are:

## F. C. BLANDIN.

Adams.	JoDavies.	Mercer.
Boone.	Kane.	Ogle.
Brown.	Kankakee.	Peoria.
Bureau.	Kendall.	Piatt.
Carroll.	Knox.	Rock Island.
Champaign.	Lake.	Schuyler.
DeKalb.	LaSalle.	Stark.
DeWitt.	Lee.	Stephenson.
DuPage.	Livingston.	Tazewell.
Ford.	Logan.	Vermilion.
Fulton.	Macon.	Warren.
Grundy.	Marshall.	Whiteside.
Hancock.	Mason.	Will.
Henderson.	McDonough.	Winnebago.
Henry.	McLean.	Woodford.
Iroquois.	McHenry.	

## DR. H. T. BURNAP.

Adams.	Jefferson.	Randolph.
Bond.	Jersey.	Richland.
Cass.	Lawrence.	Sangamon.
Christian.	Macoupin.	Scott.
Clinton.	Madison.	Shelby.
Clay.	Marion.	St. Clair.
Coles.	Menard.	Wabash.
Cumberland.	Monroe.	Washington.
Edwards.	Morgan.	Wayne.
Effingham.	Montgomery.	White.
Greene.	Moultrie.	Williamson.
Hamilton.	Perry.	
Jackson.	Pike.	

Due to these personal visits by the field agents the division has on file a great deal of invaluable information relative to local conditions that serves as a guide in clearing up problems that otherwise would be extremely difficult of solution. The activity of the field agents has also resulted in obtaining a greater and a more cordial cooperation from

all those people upon whom the department must largely depend for fulfilling the provisions of the vital statistic laws. It is believed that a more extensive amount of personal contact with local registrars and others (which might be brought about through agreement with the Division of Communicable Diseases whereby district health officers could frequently be assigned to this work), would be the quickest and surest means for overcoming many of the difficulties and problems that have always been associated with the collection of vital statistic records and would hasten the day when birth reports would be filed sufficiently complete to make Illinois eligible for the Federal Registration Area.

#### INDEXING AND TABULATING.

The office machinery for indexing and tabulating all certificates of deaths, births and stillbirths, has been so organized and extended during the fiscal year that this matter is now for the first time carried on as a regular routine activity. Heretofore the limited office facilities made it possible to index only death certificates, but since January 1, 1921, birth certificates have also been indexed. At the close of the fiscal year all death certificates from the State, outside of Chicago, for 1920 had been indexed and the close of the next fiscal year will find the same thing true of both death and birth certificates for 1921.

As a result of the system now in operation the division has available for immediate reference any data provided for on the standard certificate of death pertaining to deaths that occurred in the State, outside of Chicago, during 1919 and 1920. This information is comparable in every detail with that of any territory included in the Federal Registration Area. The same kind of data will be available in the future for both births and deaths, but the former will not be comparable with figures for units in the Federal Registration Area until the State has been admitted into that area for births.

#### STATISTICAL REPORTS.

During the fiscal year the demand for various statistical reports has been greater than usual. Of particular interest and importance among these was the tabulation of infant mortality in the State for 1920, and the working out of figures showing the number of births reported compared with the number that probably actually occurred. Other reports that carry unusual interest are:

Mortality record of Illinois, showing deaths (exclusive of stillbirths) from all causes and from diseases of major sanitary importance, by counties and by principal cities and towns, for July 1, 1920-June 30, 1921, inclusive. This table has been arranged to include all cities of the State which had 10,000 or more population according to the census of 1920. (See table 7, p. 98.)

A record by counties and principal cities and towns of all births reported for the fiscal year 1920-1921. (See table 8, p. 104.)

A summary of the statistics of births and deaths (exclusive of stillbirths), for Illinois with rates per 1,000 population (revised in accordance with the census of 1920) for the years 1916-1920, inclusive. (See table 9, p. 106.)

A table that indicates the probable degree of completeness of birth and death registration for the calendar years of 1919 and 1920, and shows the probable deficiencies in the number of births reported for these years from the State, city of Chicago, and State exclusive of Chicago. (See table 12, p. 114.)

A comparison of the annual mortality summaries for Illinois, for the years 1917-1920, inclusive, covering the diseases reportable to the United States Public Health Service. (See table 10, p. 107.)

Deaths of infants, (exclusive of stillbirths) by color, by nativity of white mother and by counties and principal cities and towns during the year 1920. (See table 10a, p. 108.)

Deaths, all causes, by months, cause and color by counties, during the year 1919.

Deaths, all causes, by months, cause and color by principal cities and towns during the year 1919.

Deaths, due to the puerperal state, by age groups, color, nativity of whites and by counties.

In addition to the above, numerous mortality tables for minor districts and cities, rate tables and comparative tables, were compiled in response to requests received from various sanitary engineers, physicians, public health nurses, collegiate instructors, public school teachers and pupils, and considerable data bearing on accidents, etc., was furnished to certain technical trade papers and health papers for publication.

#### COÖPERATION WITH OUTSIDE ORGANIZATIONS.

Throughout the year the division has continued to render all possible assistance to various organizations of the country which desired aid in statistical studies. The organizations chiefly served were: The United States Public Health Service; the Children's Bureau; the Eastern and Central divisions of the American Red Cross; the State Committee on Tuberculosis and Public Health of the State Charities Association, and the National and State Tuberculosis Associations.

#### MISSIONARY WORK.

Under the head of missionary work all the educational work accomplished through other than regular channels is included. This consists of such items as public addresses by members of the division, discussions at intra-departmental conferences of various characters, material for the public press and exhibits prepared for public display. During the year a great deal of time and effort has been devoted to work along these lines, and it is believed to have had a decidedly beneficial effect upon the public mind.

The exhibit material prepared by the division seems particularly worthy of note. Various kinds of attractive wall panels and charts that depict the more important vital statistic subjects were designed and displayed on a number of occasions where visitors from all over the State were present. This equipment, sufficient in quantity to utilize the space in a booth 20 feet long and 10 feet deep, has attracted widespread and favorable attention and has already been reserved for use in a large number of communities during the coming year.

#### REGISTRATION IN COOK COUNTY.

Since the population in Cook County is equal to nearly half of that of the entire State, the registration of births and deaths in that county has an important bearing upon the records of the State. It is, therefore, very gratifying to note that during the fiscal year Cook County

showed a very marked improvement along all lines of vital statistic reports.

The improvement has been due largely to two reasons. First, all local registrars (of whom there are more than 80) have received settlement for all back fees and arrangements have been made whereby fees will be more promptly paid in the future. Second, the health department in Chicago has carried out a vigorous campaign relative to birth registration that resulted in a great increase in the completeness of returns.

#### BIRTH REGISTRATION.

Engraved certificates of birth registration that were designed by the department and placed in the hands of the division to be filled out and forwarded to the parents of all children whose births are properly recorded, have not been issued with the dispatch desired, because of insufficient clerical help. On the other hand, the proposition presents such great possibilities for stimulating favorable public opinion in behalf of complete and satisfactory birth registration that arrangements have recently been made at the suggestion of the new Director of Public Health, to secure the cooperation of all divisions of the department in carrying out the program in a creditable fashion. The forms have also been improved so that their value to the parents and the children concerned will be greatly enhanced.

Two pieces of new work that have an unusually important bearing upon satisfactory birth registration have been accomplished during the year. One was the completion of a directory that embraces all hospitals and institutions in operation in the State. This book, that has already become of invaluable service in facilitating the work of the division in correcting errors in birth reports, was completed only after a prolonged task of the most painstaking and tedious nature.

The other piece of work grew out of and was made possible by the first. Placards of an attractive character, designed for the purpose of calling constantly to the attention of physicians the importance of carefully observing the birth registration law, were distributed and caused to be prominently posted in the more than 600 institutions listed in the directory. This work, as well as that relating to death certificates from institutions, was greatly facilitated through the hearty cooperation that was obtained from the State Department of Public Welfare. Communications already received, together with a noticeable improvement in the character and completeness of statistical reports from a large number of the institutions, lead to the belief that the task was well worth the time and efforts spent.

#### BINDING AND FILING CERTIFICATES.

During the fiscal year the division found it advisable, for the first time, to undertake the binding of all certificates on hand for the years



1916 to 1920, inclusive. This work had been postponed from year to year because, for one reason or another, a considerable number of old certificates continued to be received. It became apparent during the latter part of the year, however, that records for past years were as nearly complete as could ever be expected so that the work of binding was undertaken and completed.

The system of numbering and filing certificates in the chronological order of their receipt, adopted on January 1, 1921, has proved to be entirely unsatisfactory from every standpoint, due in large measure to the unavoidably delayed reports from many quarters. It is, therefore, strongly recommended that the old system of filing together, by months and irrespective of time of receipt, all certificates from each county be readopted. Experiences, both in this and other states, have demonstrated that the latter is the most practical system of filing that has yet been devised.

#### POPULATION REVISIONS.

On the basis of the fourteenth Federal census that was taken in January, 1921, the division has made a complete revision of population figures for the various political units of the State. It is interesting to note that 46 counties showed an increase and 56 a decrease in population, compared with the 1910 census. Revised estimates of the population of all counties and principal cities in the State for each six months period since July 1, 1915, are now available.

#### CONCLUSION.

In conclusion it may be said that the work of the division during the fiscal year has been more extensive in scope and more efficient in character than for any previous year. For this the new Director of Public Health deserves no little credit since he has from the first exercised a deep interest in the work and has offered many and valuable suggestions. The Civil Service Commission is also commended for its uniform success in filling the vacancies in the division with exceptionally capable employees. It is believed that the extension of the policies that have been worked out during recent months will result in placing the vital statistic records of Illinois among the best and most complete in the country.

TABLE 7—MORTALITY RECORD OF ILLINOIS, DEATHS, (EXCLUSIVE OF STILL-IMPORTANCE, BY COUNTIES, AND PRINCIPAL CITIES

Counties with important cities and towns.	Estimated population Jan. 1, 1921 (mid-year).	Deaths—all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.					
				Typhoid Fever.	Malaria.	Smallpox.	Measles.	Scarlet Fever.	Whooping Cough.
The State.....	6,572,492	71,034	10.8	370	76	29	353	361	549
Adams.....	162,188	835	13.4	5	—	—	9	2	3
Quincy.....	135,978	478	13.3	2	—	—	6	—	1
Alexander.....	24,108	322	13.4	—	2	—	—	—	3
<i>  Cairo.....</i>	<i>15,271</i>	<i>247</i>	<i>16.2</i>	<i>6</i>	<i>1</i>	—	—	—	<i>3</i>
Bond.....	116,045	136	8.5	3	2	—	—	1	4
Boone.....	115,322	157	10.2	1	—	—	—	1	1
Brown.....	19,336	78	8.4	1	—	—	—	—	—
Bureau.....	142,648	391	9.2	1	—	—	3	1	2
Calhoun.....	18,245	70	8.5	1	—	—	—	—	1
Carroll.....	19,479	125	6.4	—	—	—	—	—	—
Cass.....	17,950	150	8.4	1	1	—	1	2	—
Champaign.....	57,487	526	9.1	1	1	—	1	1	3
<i>  Champaign.....</i>	<i>16,229</i>	<i>202</i>	<i>12.4</i>	—	—	—	—	<i>1</i>	<i>1</i>
<i>  Urbana.....</i>	<i>10,450</i>	<i>235</i>	<i>(2)</i>	<i>1</i>	—	—	—	—	—
Christian.....	38,856	416	10.7	2	—	—	1	1	2
Clark.....	121,165	195	9.2	1	2	—	—	—	3
Clay.....	117,684	160	9.0	1	1	2	3	—	—
Clinton.....	22,959	198	8.6	1	—	—	2	1	10
Coles.....	35,168	418	11.9	4	—	—	—	—	5
<i>  Mattoon.....</i>	<i>13,768</i>	<i>198</i>	<i>14.4</i>	<i>3</i>	—	—	—	—	<i>2</i>
Cook.....	3,119,741	34,535	11.1	30	1	2	146	188	164
<i>  Berwyn.....</i>	<i>15,006</i>	<i>356</i>	<i>(3)</i>	—	—	—	<i>31</i>	—	—
<i>  Blue Island.....</i>	<i>11,772</i>	<i>279</i>	<i>(2)</i>	—	—	—	<i>1</i>	<i>6</i>	<i>2</i>
<i>  Chicago.....</i>	<i>2,754,899</i>	<i>30,028</i>	<i>10.9</i>	<i>26</i>	<i>1</i>	—	<i>138</i>	<i>168</i>	<i>130</i>
<i>  Chicago Heights.....</i>	<i>20,181</i>	<i>224</i>	<i>11.1</i>	<i>1</i>	—	—	—	<i>4</i>	<i>5</i>
<i>  Cicero.....</i>	<i>48,131</i>	<i>302</i>	<i>6.3</i>	—	—	—	<i>4</i>	<i>2</i>	<i>4</i>
<i>  Elgin.....</i>	<i>(4)</i>	<i>(4)</i>	—	—	—	—	—	—	—
<i>  Evanston.....</i>	<i>38,496</i>	<i>411</i>	<i>10.7</i>	<i>2</i>	—	—	—	<i>2</i>	<i>3</i>
<i>  Forest Park.....</i>	<i>11,198</i>	<i>349</i>	<i>(3)</i>	—	—	—	—	—	—
<i>  Maywood.....</i>	<i>12,488</i>	<i>356</i>	<i>(3)</i>	—	—	—	—	—	—
<i>  Oak Park.....</i>	<i>41,960</i>	<i>519</i>	<i>12.4</i>	—	—	—	<i>1</i>	<i>3</i>	—
Crawford.....	122,771	223	9.8	2	—	2	1	3	3
Cumberland.....	112,858	118	8.2	1	—	—	—	1	—
DeKalb.....	131,339	314	10.0	1	—	—	—	—	2
DeWitt.....	19,288	210	10.9	3	—	—	1	1	6
Douglas.....	19,738	163	8.3	5	—	—	—	1	4
DuPage.....	43,014	297	6.9	—	—	—	—	3	1
Edgar.....	125,769	317	12.3	1	—	—	2	—	7
Edwards.....	19,431	97	10.3	1	—	—	1	2	3
Effingham.....	119,556	185	9.5	2	—	—	1	—	2
Fayette.....	126,187	222	8.5	5	—	—	1	—	5
Ford.....	116,466	148	9.0	2	—	—	—	1	1
Franklin.....	60,523	511	8.4	12	2	1	4	—	4
Fulton.....	148,163	504	10.5	1	1	1	—	5	2
<i>  Canton.....</i>	<i>10,976</i>	<i>156</i>	<i>14.2</i>	—	—	—	—	<i>1</i>	<i>1</i>
Gallatin.....	112,856	98	7.6	3	3	—	3	—	1
Greene.....	22,937	194	8.5	3	—	—	—	—	—
Grundy.....	118,580	176	9.5	1	—	—	—	—	2
Hamilton.....	115,920	166	10.4	5	1	1	—	—	2
Hancock.....	128,523	279	9.8	2	—	—	2	—	2
Hardin.....	7,587	66	8.7	4	—	—	5	—	—
Henderson.....	9,774	77	7.9	—	—	—	—	—	1
Henry.....	45,514	475	10.4	5	—	1	2	6	6
<i>  Kewanee.....</i>	<i>16,718</i>	<i>2101</i>	<i>(2)</i>	<i>1</i>	—	—	<i>2</i>	<i>2</i>	<i>1</i>
Iroquois.....	34,841	356	10.2	—	—	—	—	3	3
Jackson.....	137,291	410	11.0	9	9	1	1	—	6
<i>  Murphysboro.....</i>	<i>11,035</i>	<i>354</i>	<i>(3)</i>	<i>32</i>	<i>52</i>	—	—	—	<i>32</i>
Jasper.....	116,064	87	5.4	2	—	—	—	—	2
Jefferson.....	128,480	355	12.5	12	1	—	9	1	9
Jersey.....	112,682	117	9.2	3	—	—	2	—	—

BIRTHS) FROM ALL CAUSES, AND FROM DISEASES OF MAJOR SANITARY AND TOWNS, JULY 1, 1920-JUNE 30, 1921 INCLUSIVE.

## Diseases of major sanitary importance.

Diphtheria.	Influenza.	Rabies (in man) Hydrophobia.	Pulmonary Tuberculosis.	Tuberculosis—other forms.	Chronic Bronchitis.	Cerebro Spinal Fever (Epidemic Cerebro Spinal Meningitis).	Acute Anterior Polomyelitis (Infantile Paralysis).	Pneumonia—all forms.	Septic Sore Throat	Syphilis.	Gonococcus Infection.
1,243	597	2	4,939	655	259	63	66	4,948	190	419	41
4	5		48	5	3			31	4	3	1
1	2		30	4				19	4	3	1
3	8		33	7	1			14		3	3
1	6		22	5	1			11		2	3
2	1		9	1			1	13		1	
2	3		6	2	1		1	9	1		1
	1		3	1				9			
7	4		19	4	1	1		31			
	1		4	1				6	1		
			3	1	1			11		1	
1	5		4	2			3	17		1	
2	8		22	2	1		1	39	3	5	
1	2		7	1	1		1	14	1	4	
1	1		7	1				3	2	1	
5	7		17	4	2		1	35	2	2	
2	1		14	2				17	1		
3	1		16	2			2	10		1	
6	3		15	2	1			11		1	
2	2		30	8				28	7	4	
	1		11	2				15	4	4	
762	151	2	2,595	345	111	30	11	2,545	34	218	12
31			310	31				31			
5		1	1	1				13	1		1
698	124	1	2,049	298	99	28	8	2,254	20	198	9
4	3		9	3	1			24	2		
7			21	2	1	1	1	26	1	1	
14	1		19	4	1	1	2	20			1
32			33					33			
31			37					34			
6	8		14	2	1			30	2	2	1
2	4		10	1		2		23			
4	1		10	2		1		14			
	3		15	4				17	1	1	
4	3		9		1	1		17	1	1	1
1	2		11		1			7	1		
9	1		18	1			1	22	3		
3	3		19	1		1	1	9			
2	1		7	1			1	3			
2			15	3				13	1	6	
4	4		21	3				18			
			5	2	1	1		9	1	1	
16	7		35	5	1		1	48	1	7	
8	22		24	4		1		33	4	3	
2	10		6	1				6	2		
5			8	2	1			4			
	3		11	3			1	11			
1	6		8	1			1	12		1	
5	3		21	1	1			19	2		
2	9		10	4	5			11	1		
4			11	1				4			
	4		2					7			
16	8		26	6	1	1	1	33	5		1
14	2		4	3	1	1		11	2		
4	3		10	4		1		18		2	1
12	5		33	2	2	1		24	2	7	
32			37					33		32	
1			7					3			
5	3		43	2	2	1	2	28	2		
	3		7	1				5		1	

TABLE 7—

Counties with important cities and towns.	Estimated population Jan. 1, 1921 (mid-year).	Deaths—all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.					
				Typhoid Fever.	Malaria.	Smallpox.	Measles.	Scarlet Fever.	Whooping Cough.
Jo Daviess.....	121,917	213	9.7	—	—	—	—	1	1
Johnson.....	112,022	85	7.1	—	1	—	—	—	1
Kane.....	100,285	1,390	13.9	6	—	—	11	3	6
Aurora.....	37,075	455	12.3	3	—	—	1	1	4
Elgin.....	27,606	5637	23.7	—	—	—	2	—	1
Kankakee.....	45,372	703	15.5	2	—	—	4	1	5
Kankakee.....	17,039	215	12.6	2	—	—	—	1	4
Kendall.....	110,074	95	9.4	—	—	—	—	—	1
Knox.....	46,785	509	10.9	4	—	—	2	5	3
Galesburg.....	24,014	309	12.9	3	—	—	—	4	1
LaSalle.....	92,213	1,027	11.0	4	1	—	6	5	10
LaSalle.....	13,206	173	13.1	3	—	—	—	—	2
Ottawa.....	10,948	281	(2)	—	—	—	—	1	1
Streator.....	14,833	205	13.8	1	—	—	4	—	1
Lake.....	76,265	741	9.7	11	—	—	13	7	8
Waukegan.....	19,552	205	10.5	2	—	—	2	1	4
Lawrence.....	121,380	200	9.4	4	3	—	3	2	5
Lee.....	28,030	245	8.7	—	—	—	—	4	1
Livingston.....	139,070	324	8.3	—	—	—	1	2	4
Logan.....	129,562	319	10.8	1	1	—	4	3	4
Lincoln.....	11,984	195	16.3	—	1	—	—	2	1
McDonough.....	27,094	273	10.1	1	—	—	—	1	1
McHenry.....	33,232	357	10.7	—	—	—	—	—	2
McLean.....	70,323	813	11.6	5	—	2	6	6	10
Bloomington.....	29,029	383	13.2	4	—	—	5	1	4
Macon.....	66,307	729	11.0	6	1	1	—	2	6
Decatur.....	45,124	571	12.7	6	—	1	—	—	3
Macoupin.....	57,952	483	8.3	4	—	—	9	2	10
Madison.....	108,651	1,200	11.0	8	3	5	3	15	15
Alton.....	23,418	284	11.2	3	1	—	—	2	2
Granite City.....	15,257	166	10.9	—	—	3	2	1	2
Marion.....	37,745	409	10.8	5	1	—	2	—	7
Centralia.....	12,781	270	(2)	—	1	—	—	—	1
Marshall.....	114,760	129	8.7	2	—	—	—	3	—
Mason.....	116,634	142	8.5	2	—	—	—	—	—
Massac.....	113,559	144	10.6	3	—	1	—	—	5
Menard.....	111,694	100	8.6	—	—	—	1	4	—
Mercer.....	118,860	175	9.3	1	—	—	2	—	—
Monroe.....	112,839	66	5.1	3	—	—	—	1	1
Montgomery.....	42,031	469	11.2	4	—	—	5	1	1
Morgan.....	133,567	575	17.1	1	—	—	4	2	2
Jacksonville.....	15,753	448	28.4	1	—	—	2	—	1
Moultrie.....	14,861	137	9.2	—	—	—	2	—	2
Ogle.....	126,830	275	10.2	7	—	—	—	4	3
Peoria.....	112,890	1,456	13.3	7	1	1	1	14	11
Peoria.....	77,065	1,053	13.4	5	1	—	—	5	5
Perry.....	22,985	253	11.0	6	—	—	1	—	—
Piatt.....	115,714	107	6.8	—	—	—	—	3	2
Pike.....	126,866	245	9.1	1	—	—	1	1	—
Pope.....	19,625	97	10.1	3	—	—	—	—	—
Pulaski.....	114,629	174	11.9	4	5	—	1	1	—
Putnam.....	7,581	62	8.2	—	—	—	—	1	1
Randolph.....	129,109	255	8.8	7	1	—	—	1	8
Richland.....	114,044	177	12.6	6	—	1	—	1	—
Rock Island.....	94,553	968	10.2	5	1	1	1	1	8
Moline.....	31,408	316	10.1	2	—	—	—	—	3
Rock Island.....	36,293	334	9.2	3	1	1	—	1	3
St. Clair.....	138,232	1,424	10.3	10	5	1	3	4	25
Belleville.....	25,205	273	10.8	1	1	—	—	—	4
East St. Louis.....	67,613	768	11.4	6	3	1	—	2	21
Saline.....	39,193	381	9.7	7	3	—	24	—	5
Sangamon.....	101,214	1,240	12.3	7	1	—	8	14	4
Springfield.....	59,957	878	14.6	1	1	—	2	11	—
Schuyler.....	113,285	132	9.9	1	1	—	—	—	1



Continued.

## Diseases of major sanitary importance.

Diphtheria.	Influenza.	Rabies (in man) Hydrophobia.	Pulmonary Tuberculosis.	Tuberculosis—other forms.	Chronic Bronchitis.	Cerebro Spinal Fever (Epidemic Cerebro Spinal Meningitis).	Acute Anterior Polomyelitis (Infantile Paralysis).	Pneumonia—all forms.	Septic Sore Throat	Syphilis.	Gonococcus Infection.
4	2		11	1				19			
8			8	1				5	1		
5	16		80	17	5	1		79	4	4	
3	5		21	7	4	1		24	2	2	
8	5		39	6				31	1	2	
	4		74	5	5			32	3	1	
	1		12	3				14	2		
	3		3		2			6			
2	3		23	5	2			29	2	7	
1	3		14	3	1			18	2	3	
7	5		68	4	5	2	2	79	5	2	
			6	1				15	2	1	
1			9	1	1			11			
	2		6		1	1		24			
6	11		32	5	2	3	4	53	2	4	
	2		9				1	10	2	2	
3	1		13	2	1		1	14	1	1	
1	2		14	3				13			
3	3		10	2	4		1	22	1	1	
1	7		35	1	2			30		2	
	3		30	1				15	2	1	
1	5		16	3	1			11	1	4	
5	4		24	2	2		1	25	1	1	
9	5		44	4	3	1	1	45	3	2	
2	2		22	3	1	1		24	3	1	
17	8		41	5	1			45	1	10	1
16	6		32	5			1	37	1	9	1
9	12		15	1	5	1		41	1	2	
25	15		74	10	8		3	70	6	9	
13	2		18	1	2			15	1	1	
	1		14	1			1	4	2	3	
4	8		25	3	2			23	1	1	1
3	1		5					6		1	
3	1		8	1		1		9			
	1		12	2				8			
6			18					9	2	2	
1	1		5	2				5		1	
	1		3					11			
4	7		24	2	2	1		4			
1	1		37	5				27	3	4	1
	1		34	1	1			56		10	1
			7		4			31		9	1
1	5		6	1				10			
27	20		105	8	2	1	3	19			2
24	14		43	5	2		3	96	6	16	
2	5		10	2	4	1		70	5	13	2
3	2		7	4	1			9	1	3	
4	1		6	3				6			
2	1		7	2	1			17	1		
6	1		20	2			2	3	1	1	
	1		3	1				13			
5			19	4	3		2	5			
4			14	1				16	1	1	
5	4		67	11	6		1	5	1	1	1
2			20	5	3			60	8	7	1
2	3		24	6	1		1	15	2	2	1
21	12		98	11	9	2	3	21	6	1	
	2		20	2	2			113	5	15	2
7	5		55	9	2	2	3	22		1	
19	12		39	2	2		1	67	5	10	2
7	16		132	7	4		4	39	4	1	1
2	9		48	4	3		3	88		10	4
	1		12	1				60		10	4
								14			1

TABLE 7—

Counties with important cities and towns.	Estimated population Jan. 1, 1921 (mid-year).	Deaths—all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.					
				Typhoid Fever.	Malaria.	Smallpox.	Measles.	Scarlet Fever.	Whooping Cough.
Scott.....	19,489	90	9.5	1			1		
Shelby.....	129,601	288	9.7	3	1		1		7
Stark.....	19,693	83	8.6						1
Stephenson.....	37,837	460	12.2			1		1	2
Freeport.....	19,989	321	16.1			1		1	1
Tazewell.....	39,004	324	8.3	3	1			3	4
Pekin.....	12,199	261	(2)	1	1				
Union.....	120,249	390	19.3	6	4		2		
Vermilion.....	87,004	1,164	13.4	13	1			2	32
Danville.....	34,384	609	14.8	8	1			1	12
Wabash.....	14,034	131	9.3	4			1		1
Warren.....	121,488	215	10.0				2	1	3
Washington.....	118,035	153	8.5	3					2
Wayne.....	122,772	197	8.7	4	2				1
White.....	120,081	225	11.2	9	1		1		1
Whiteside.....	36,346	361	9.9	1			4	1	6
Will.....	93,791	1,044	11.1	9			19	3	16
Joliet.....	38,830	448	11.5	7			10	2	10
Williamson.....	62,740	621	9.9	20	9	3	1		4
Herrin.....	11,410	359	(3)	32		32			31
Winnebago.....	93,791	926	9.9	4	1	1	4	6	6
Rockford.....	67,737	722	10.7	4	1		3	5	4
Woodford.....	19,340	147	7.6					4	2
County total.....	(6)	71,034	10.8	370	76	29	353	361	549

<sup>1</sup> Population as of January 1, 1920; decrease between 1910 and 1920; no estimate as of July 1, 1920 made.

<sup>2</sup> Not designated by the U. S. Bureau of the Census until 1921 to be shown separately.

<sup>3</sup> Not designated by the U. S. Bureau of the Census until 1921 to be shown separately; hence, figures for the last six months of 1920 are not available.

<sup>4</sup> See Elgin, Kane County.

<sup>5</sup> Includes two deaths occurring in that part of the city which is in Cook County.

<sup>6</sup> See estimated population as of January 1, 1921 for State, page 652.

Concluded.

## Diseases of major sanitary importance.

Diphtheria.	Influenza.	Rabies (in man) Hydrophobia.	Pulmonary Tuberculosis.	Tuberculosis—other forms.	Chronic Bronchitis.	Cerebro Spinal Fever (Epidemic Cerebro Spinal Meningitis).	Acute Anterior Polomyelitis (Infantile Paralysis).	Pneumonia—all forms.	Septic Sore Throat	Syphilis.	Gonococcus Infection.
2	2		5	2	1			5			
1	1		17	2	2			19	1		
4	4		3					4	1		
5	3		17	3			2	24	5	2	
4	1		13	2			2	19	5	2	
3	5		16	1	1			16	2		
1	4		6					5			
9	2		56	3	1		1	19	1	7	
5	13		66	9	12	2		65	14	2	1
	6		27	4	5			27	3	2	1
3	1		8	1	1			4	1		
1	1		9	3	1	2		13	3		
5	3		8	1	1			12	1	1	
11	5		18	4	1		1	19	1		
15	5		17	1	1			19			
2	6		11	3	1		1	28	2		
17	22		79	13	2	1		75	4	1	2
9	9		23	7	2		1	31	2	1	
14	14		43	9	3		2	35	3	1	1
32	31		34					33			
5	6		50	11	2	3	1	66	4	12	1
4	3		42	9	1	1	1	52	3	10	
1	1		5	1				7	1		
1,243	597	2	4,939	655	259	63	66	4,948	190	419	41

TABLE 8—REPORTED BIRTHS IN ILLINOIS, BY COUNTIES AND PRINCIPAL CITIES AND TOWNS, JULY 1, 1920-JUNE 30, 1921, INCLUSIVE.

Counties with important cities and towns.	Total July 1, 1920 to June 30, 1921 inclusive.	Counties with important cities and towns.	Total July 1, 1920 to June 30, 1921 inclusive.
The State.....	126,302	Knox.....	925
Adams.....	1,075	Galesburg.....	554
Quincy.....	660	LaSalle.....	1,711
Alexander.....	418	LaSalle.....	338
Cairo.....	245	*Ottawa.....	148
Bond.....	283	Streator.....	380
Boone.....	261	Lake.....	1,356
Brown.....	159	Waukegan.....	451
Bureau.....	732	Lawrence.....	518
Calhoun.....	166	Lee.....	474
Carroll.....	238	Livingston.....	724
Cass.....	351	Logan.....	520
Champaign.....	1,128	Lincoln.....	192
Champaign.....	316	McDonough.....	514
*Urbana.....	88	McHenry.....	565
Christian.....	803	McLean.....	1,245
Clark.....	405	Bloomington.....	441
Clay.....	380	Macon.....	1,495
Clinton.....	539	Decatur.....	1,114
Coles.....	834	Macoupin.....	1,175
Mattoon.....	366	Madison.....	2,365
Cook.....	61,108	Alton.....	641
*Beryyn.....	97	Granite City.....	524
*Blue Island.....	123	Marion.....	782
Chicago.....	54,998	*Centralia.....	142
Chicago Heights.....	508	Marshall.....	279
Cicero.....	535	Mason.....	278
†Elgin (part).....		Massac.....	249
Evanston.....	980	Menard.....	257
*Forest Park.....	46	Mercer.....	374
*Maywood.....	68	Monroe.....	186
Oak Park.....	1,340	Montgomery.....	781
Crawford.....	383	Morgan.....	585
Cumberland.....	274	Jacksonville.....	240
DeKalb.....	613	Moultrie.....	281
DeWitt.....	465	Ogle.....	455
Douglas.....	391	Peoria.....	1,713
DuPage.....	387	Peoria.....	1,284
Edgar.....	494	Perry.....	497
Edwards.....	182	Piatt.....	344
Effingham.....	358	Pike.....	468
Fayette.....	491	Pope.....	109
Ford.....	309	Pulaski.....	213
Franklin.....	775	Putnam.....	150
Fulton.....	929	Randolph.....	614
Canton.....	275	Richland.....	280
Gallatin.....	243	Rock Island.....	1,769
Greene.....	479	Moline.....	816
Grundy.....	327	Rock Island.....	496
Hamilton.....	247	St. Clair.....	2,661
Hancock.....	482	Bellenille.....	477
Hardin.....	160	East St. Louis.....	1,400
Henderson.....	174	Saline.....	528
Henry.....	891	Sangamon.....	1,895
*Kewanee.....	173	Springfield.....	1,214
Iroquois.....	792	Schuyler.....	284
Jackson.....	775	Scott.....	160
*Murphysboro.....	108	Shelby.....	653
Jasper.....	297	Stark.....	167
Jefferson.....	526	Stephenson.....	710
Jersey.....	276	Freeport.....	448
JoDavies.....	410	Tazewell.....	807
Johnson.....	138	*Pekin.....	123
Kane.....	1,929	Union.....	365
Aurora.....	901	Vermilion.....	1,737
†Elgin (part).....	531	Danville.....	774
Kankakee.....	811	Wabash.....	290
Kankakee.....	369	Warren.....	427
Kendall.....	179	Washington.....	298
		Wayne.....	390



TABLE 8—Concluded.

Counties with important cities and towns.	Total July 1, 1920 to June 30, 1921 inclusive.	Counties with important cities and towns.	Total July 1, 1920 to June 30, 1921 inclusive.
White.....	380	Winnebago.....	1,910
Whiteside.....	746	Rockford.....	1,603
Will.....	1,706	Woodford.....	460
Joliet.....	640		
Williamson.....	1,420	Total all counties.....	126,302
*Herrin.....	148		

† See Elgin, Kane County.

‡ Includes 1 birth occurring in that part of the city which is in Cook County.

\* Not designated by the U. S. Bureau of the Census until 1921 to be shown separately; hence figures for last six months 1920 are not available.

TABLE 9.—STATISTICS OF BIRTHS AND DEATHS FOR ILLINOIS, WITH RATES PER 1,000 POPULATION, THE YEARS OF 1916, 1917, 1918, 1919 AND 1920  
(Exclusive of stillbirths).

Area.	The State: total.					Chicago.					State exclusive of Chicago.				
	Population, estimated as of July 1, (mid-year).	Reported births.	Birth rate per 1,000 population.	Reported deaths.	Death rate per 1,000 population.	Population, estimated as of July 1, (mid-year).	Reported births.	Birth rate per 1,000 population.	Reported deaths.	Death rate per 1,000 population.	Population, estimated as of July 1, (mid-year).	Reported births.	Birth rate per 1,000 population.	Reported deaths.	Death rate per 1,000 population.
1920-----	6,528,886	120,360	18.4	82,132	12.6	2,798,302	50,303	18.4	34,841	12.8	3,800,584	70,057	18.4	47,291	12.4
1919-----	6,441,674	110,770	17.2	77,528	12.0	2,675,108	44,051	16.5	33,494	12.5	3,766,566	66,719	17.7	44,031	11.7
1918-----	6,354,462	117,055	18.4	103,138	16.2	2,621,914	49,707	19.0	44,605	17.0	3,732,548	67,348	18.0	58,533	15.7
1917-----	6,267,250	108,896	17.4	86,231	13.8	2,568,720	49,556	19.3	38,055	14.8	3,698,530	59,340	16.0	48,176	13.0
1916-----	6,180,038	114,298	18.5	81,345	13.2	2,515,526	47,769	19.0	36,304	14.4	3,664,512	66,529	18.2	45,041	12.3

\* Revised estimates, based on the United States Censuses, April 15, 1910 and January 1, 1920.

TABLE 10—COMPARISON OF ANNUAL MORTALITY SUMMARIES, ILLINOIS, YEARS 1917, 1918, 1919 AND 1920.

Diseases.	Deaths occurring in—					
	1917			1918		
	State, Chicago not included.	City of Chicago.	Total.	State, Chicago not included.	City of Chicago.	Total.
Anthrax in man	0	0	0	0	0	0
Dengue	0	0	0	0	0	0
Diphtheria	497	1,228	1,725	432	720	1,152
Influenza	*	*	*	10,908	6,971	17,879
Leprosy	*	*	*	77	0	77
Malaria	105	3	108	63	0	63
Measles	523	243	766	278	63	341
Meningitis (epidemic cerebro spinal)	124	198	322	71	93	164
Pneumonia (all forms)	*	*	*	7,445	7,000	14,445
Polomyelitis (acute infectious)	49	187	236	119	25	144
Rabies (in man)	1	2	3	3	0	3
Rabies (in animals)	40	40	80	40	40	80
Rocky Mountain Spotted (or tick) fever	0	0	0	0	0	0
Scarlet fever	168	623	791	106	48	154
Septic sore throat	28	34	62	71	4	75
Smallpox	8	2	10	10	4	14
Tuberculosis (pulmonary)	3,823	3,291	7,114	4,343	3,276	7,619
Tuberculosis (all forms)	4,265	3,800	8,065	4,693	3,827	8,520
Typhoid fever	472	43	515	495	38	533
Typhus fever	0	0	0	0	0	0
Totals	6,245	6,363	12,608	24,707	18,793	43,500
Totals with Pneumonia and In- fluenza excluded	6,245	6,363	12,608	6,354	4,822	11,176
Totals				12,428	9,380	21,808
				5,473	4,270	9,743
				13,577	9,499	23,076
				5,686	3,647	9,333

\* Not included in this report. † Included in Tuberculosis (all forms). ‡ Not reported.

TABLE 10A—POPULATION, REPORTED BIRTHS WITH BIRTH RATES PER 1,000 POPULATION OF 22.3—BIRTH RATE FOR FEDERAL REGISTRATION AREA, YEAR OF 1919, WITH DEATHS OF INFANTS UNDER 1 YEAR OF AGE, WITH DEATH RATES PER 1,000 WITH ESTIMATED INFANT MORTALITY RATES BASED ON PROBABLE NUMBER BIRTHS ACTUALLY REPORTED AND BIRTH RATES ESTIMATED FOR TOTAL POPULATION OR OVER. CALENDAR YEAR OF 1920.

Area.	1	2	3	4	5	6			
	Esti- mated (revised) popu- lation as of July 1, (mid- year).	Re- ported births.	Birth rate per 1,000 popu- lation.	Prob- able number of births based on rate of 22.3.	Prob- able defi- ciencies or excesses in reports.	Deaths of infants under 1 year of age (exclusive of stillbirths).			
						Less than 1 day.	Less than 1 week.	Less than 1 month.	1 month.
Adams County.....	62,188	1,116	17.9	1,387	-271	12	16	4	9
<i>Quincy</i> .....	55,978	701	19.5	802	-101	9	14	4	7
Alexander County.....	24,044	414	17.2	536	-122	9	8	5	3
<i>Cairo</i> .....	15,237	233	15.3	340	-107	4	5	4	-----
Bond County.....	16,045	273	17.0	358	-85	1	2	4	1
Boone County.....	15,322	247	16.1	342	-95	6	8	1	2
Brown County.....	9,336	169	18.1	208	-39	2	1	1	-----
Bureau County.....	42,648	772	18.1	951	-178	18	13	9	5
Calhoun County.....	8,245	188	22.8	184	+4	9	2	1	1
Carroll County.....	19,412	222	11.4	433	-211	4	4	7	1
Cass County.....	17,923	367	20.5	400	-33	6	5	7	3
Champaign County.....	57,223	1,134	19.8	1,276	-142	24	12	12	16
<i>Champaign</i> .....	16,051	291	18.1	358	-67	7	4	2	2
<i>Urbana</i> .....	10,347	(4)	(4)	(4)	(4)	8	2	2	4
Christian County.....	38,657	783	20.3	862	-79	14	9	7	3
Clark County.....	21,165	414	19.6	472	-58	9	4	2	-----
Clay County.....	17,684	372	21.0	394	-22	8	4	2	2
Clinton County.....	22,953	561	24.4	512	+49	6	3	8	3
Coles County.....	35,138	788	22.4	784	+4	18	12	12	4
<i>Mattoon</i> .....	13,660	324	23.7	305	+19	5	4	4	3
Cook County.....	2,086,379	56,227	18.2	68,826	-12,599	847	1,027	(6)	(6)
<i>Chicago</i> .....	2,728,302	50,303	18.4	60,041	-10,538	764	925	(6)	(6)
<i>Chicago Heights</i> .....	19,917	473	23.7	444	+29	7	15	12	3
<i>Cicero</i> .....	46,563	621	13.3	1,038	-417	8	16	10	9
<i>Elgin</i> .....	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)
<i>Easton</i> .....	37,865	960	25.4	844	+116	13	13	5	4
<i>Maywood</i> .....	22,280	(4)	(4)	(4)	(4)	-----	2	2	-----
<i>Oak Park Village</i> .....	40,909	1,198	29.3	912	+286	23	16	8	8
<i>Blue Island</i> .....	11,598	(4)	(4)	(4)	(4)	2	4	3	5
<i>Berwyn</i> .....	14,578	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Crawford County.....	22,771	400	17.6	508	-108	7	9	5	5
Cumberland County.....	12,858	286	22.2	287	-1	6	3	4	1
DeKalb County.....	31,339	627	20.0	699	-72	7	7	7	4
<i>DeKalb</i> .....	7,871	(4)	(4)	(4)	(4)	2	2	6	1
DeWitt.....	19,270	438	22.7	430	+8	6	4	10	1
Douglas County.....	19,611	422	21.5	437	-15	4	5	5	1
DuPage County.....	42,567	453	10.6	949	-496	7	8	8	2
Edgar County.....	25,769	501	19.4	575	-74	10	9	11	1
Edwards County.....	9,431	166	17.6	210	-44	3	2	3	-----
Effingham County.....	19,556	355	18.2	436	-81	6	7	5	1
Fayette County.....	26,187	498	19.0	584	-86	13	8	10	4
Ford County.....	16,466	331	20.1	367	-36	6	4	4	1
Franklin County.....	58,908	749	12.7	1,314	-565	26	25	21	17
Fulton County.....	48,163	909	18.9	1,074	-165	10	6	16	3
<i>Canton</i> .....	10,952	229	20.9	244	-15	4	-----	4	1
Gallatin County.....	12,856	241	18.7	287	-46	3	1	4	-----
Greene County.....	22,910	484	21.1	510	-26	9	5	9	4
Grundy County.....	18,580	299	16.1	414	-115	6	4	4	2
Hamilton County.....	15,920	240	15.1	355	-115	3	3	3	1
Hancock County.....	28,523	467	16.4	636	-169	3	2	4	6
Hardin County.....	7,560	161	21.3	169	-8	-----	1	1	-----
Henderson County.....	9,772	175	17.9	218	-43	4	3	3	2
Henry County.....	45,338	832	18.4	1,011	-179	24	7	7	3
<i>Kewanee</i> .....	16,372	(4)	(4)	(4)	(4)	15	6	2	2
Iroquois County.....	34,841	781	22.4	777	+4	15	10	4	8
Jackson County.....	37,191	814	21.9	829	-15	21	10	17	7
<i>Murphysboro</i> .....	10,869	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Jasper County.....	16,064	339	21.1	358	-19	5	3	2	2
Jefferson County.....	28,480	513	18.0	635	-122	7	5	12	3
<i>Mt. Vernon</i> .....	9,909	(4)	(4)	(4)	(4)	5	2	4	-----



TION; PROBABLE NUMBER OF BIRTHS ACTUALLY OCCURRING (BASED ON RATE CONSEQUENT PROBABLE DEFICIENCIES (OR PROBABLE HIGH BIRTH RATES.) ALSO REPORTED LIVE BIRTHS (RESULTANT INFANT MORTALITY RATES) TOGETHER OF BIRTHS OCCURRING. AND DIFFERENCE BETWEEN BIRTH RATES AS SHOWN BY CHILDREN PROBABLY BORN IN ILLINOIS, BY COUNTIES, AND CITIES OF 10,000

6					7	8	9
Deaths of infants under 1 year of age (exclusive of stillbirths).					Death of infants under 1 year of age per 1,000 reported live births (re- sultant infant mortality rate).	Estimated infant mor- tality rate (based on probable number of births occurring).	Difference between resultant and estimated infant mortality rates.
2 months.	3-5 months.	6-8 months.	9-11 months.	Total deaths under 1 year of age.			
6	9	6	8	70	62.7	50.5	12.2
3	4	5	3	49	69.9	61.1	8.8
6	9	4	8	52	125.6	97.0	28.6
2	5	1	4	25	107.3	73.5	33.8
3		2	3	16	58.6	44.7	13.9
2	2	1	2	24	97.2	70.2	27.0
3	2	1	2	9	53.3	43.3	10.0
3	8	5	5	66	85.5	69.4	16.1
	2		3	18	95.7	(9)	(9)
1	4	1	2	24	108.1	55.4	52.7
1	2	4	2	30	81.7	75.0	6.7
4	14	9	5	96	84.7	75.2	9.5
1	7	3	4	32	110.0	89.4	20.6
	1	1		16	(4)	(4)	(4)
2	8	8	6	57	72.8	66.1	6.7
1	4	1	3	24	58.0	50.8	7.2
3	1	5	2	27	72.6	68.5	4.1
3	11	4	5	43	87.6	(9)	(9)
1	8	6	4	65	82.5	(9)	(9)
	2	2	3	23	87.0	(9)	(9)
(6)	(B) 2,807	(7)	(D) 1,484	6,205	110.4	90.2	20.2
(6)	(B) 2,607	(7)	(D) 1,378	5,674	112.8	93.3	19.5
9	6	10	5	67	84.6		
4	10	8	10	75	120.8	72.3	48.5
(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)
2	12	9	3	61	86.5	(9)	(9)
			2	6	(4)	(4)	
1	3	4	2	65	85.3	(9)	
3	3		3	23	(4)	(4)	
(4)	(4)	(4)	(4)	(4)	(4)	(4)	
1		5	1	33	82.5	65.0	17.5
2	1	2	1	20	69.9	69.7	0.2
1	2		3	31	49.4	44.3	5.1
1			2	14	(4)	(4)	(4)
2	5	3	3	34	87.6	(9)	(9)
	6	5	1	27	64.9	61.8	2.2
2	6	4	2	39	86.1	41.1	45.0
	2	1	3	37	73.9	64.3	9.6
	3	5	1	17	102.4	81.0	21.4
4	1	4	4	32	90.1	73.4	16.7
3	7	7	3	55	110.4	94.2	16.2
	3	3	4	25	108.2	68.1	40.1
13	29	19	23	173	231.0	131.6	99.4
1	14	5	10	65	71.5	60.5	11.0
	5		3	17	74.2	69.7	4.5
2		3	6	19	78.8	66.2	12.6
2	1	4	1	35	72.3	68.6	3.7
2	6	2	2	28	93.6	67.5	26.0
3	2	3	2	20	83.3	56.3	27.0
1	5	3	5	29	62.1	45.6	16.5
1	2	1		6	37.3	35.5	1.8
1	2	1	3	19	108.6	87.2	21.4
6	7	4	6	64	76.9	63.3	13.6
2	3	3	2	35	(4)	(4)	(4)
1	3	4	1	46	85.9	(9)	(9)
3	16	10	4	88	108.1	106.2	1.9
(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
	2		1	15	44.2	41.9	2.3
2	9	12	10	60	117.0	94.5	22.5
	4	5	4	24	(4)	(4)	(4)

TABLE 10A

Area.	1	2	3	4	5	6			
	Esti- mated (revised) popu- lation as of July 1, (mid- year).	Re- ported births.	Birth rate per 1,000 popu- lation.	Prob- able number of births based on rate of 22.3.	Prob- able defi- ciencies or excesses in reports.	Deaths of infants under 1 year of age (exclusive of stillbirths).			
						Less than 1 day.	Less than 1 week.	Less than 1 month.	1 month.
Jersey County.....	12,682	274	21.6	233	-9	7	3	2	-----
Jo Daviess County.....	21,917	385	17.6	489	-104	12	4	5	6
Johnson County.....	12,022	119	9.9	268	-149	-----	1	1	1
Kane County.....	99,892	1,779	17.8	2,228	-449	25	31	18	8
<i>Aurora</i> .....	36,736	827	22.5	819	+8	10	14	6	1
<i>Elgin</i> .....	27,538	472	17.1	614	-142	7	11	7	1
Kankakee County.....	45,156	774	17.1	1,007	-233	12	7	12	5
<i>Kankakee</i> .....	16,896	347	20.5	377	-30	6	4	6	-----
Kendall County.....	10,074	179	17.8	225	-46	3	2	2	-----
Knox County.....	46,756	839	17.9	1,043	-204	10	20	7	8
<i>Galesburg</i> .....	23,824	503	21.0	534	-31	6	12	7	7
Lake County.....	75,275	1,269	16.9	1,679	-410	17	16	25	5
<i>Waukegan</i> .....	19,389	399	20.6	433	-33	6	6	8	2
LaSalle County.....	93,069	1,690	18.2	2,075	-385	28	28	27	10
<i>LaSalle</i> .....	13,128	351	26.7	293	+58	5	9	8	1
<i>Ottawa</i> .....	10,882	(4)	(4)	(4)	(4)	1	1	3	1
<i>Streator</i> .....	14,806	345	23.3	330	+15	5	3	4	3
Lawrence County.....	21,380	424	19.8	477	-53	10	3	3	5
Lee County.....	28,017	447	16.0	625	-178	9	5	7	4
Livingston County.....	39,070	793	20.3	271	-78	4	15	3	3
Logan County.....	29,562	511	17.3	659	-148	9	8	5	4
<i>Lincoln</i> .....	11,933	193	16.2	266	-73	4	6	2	3
Macon County.....	65,741	1,459	22.2	1,466	-7	20	19	6	9
<i>Decatur</i> .....	44,471	1,089	24.5	992	+97	16	14	4	6
Macoupin County.....	57,613	1,241	21.5	1,285	-44	15	12	16	5
Madison County.....	107,773	2,239	20.8	2,403	-164	46	35	25	19
<i>Alton</i> .....	25,050	583	23.3	559	+24	11	3	5	5
<i>Granite City</i> .....	15,007	295	19.7	335	-40	8	7	4	3
Marion County.....	37,621	797	21.2	839	-42	16	11	11	9
<i>Centralia</i> .....	12,636	(4)	(4)	(4)	(4)	8	5	2	3
Marshall County.....	14,760	264	17.9	329	-65	7	4	6	-----
Mason County.....	16,634	299	18.0	371	-72	3	-----	2	1
Massac County.....	13,559	256	18.9	302	-46	3	1	6	3
McDonough County.....	27,084	523	19.3	604	-81	11	8	4	6
McHenry County.....	33,198	527	15.9	740	-213	7	5	4	5
McLean County.....	70,215	1,261	18.0	1,566	-305	27	13	10	5
<i>Bloomington</i> .....	28,877	448	15.5	644	-196	12	5	4	1
Menard County.....	11,694	240	20.5	261	-21	4	4	1	1
Mercer County.....	18,800	344	18.3	419	-75	5	4	3	2
Monroe County.....	12,839	202	15.7	286	-84	4	3	1	2
Montgomery County.....	41,717	776	18.6	930	-154	13	11	4	7
Morgan County.....	33,567	595	17.7	749	-154	11	9	13	4
<i>Jacksonville</i> .....	15,733	266	16.9	351	-85	4	6	7	1
Moultrie County.....	14,850	295	19.9	331	-36	7	1	4	1
Ogle County.....	26,830	465	17.3	598	-133	9	10	1	3
Peoria County.....	112,300	1,629	14.5	2,504	-875	26	27	30	7
<i>Peoria</i> .....	76,593	1,209	15.8	1,708	-489	22	23	26	7
Perry County.....	22,943	492	21.4	512	-20	11	8	8	6
Piatt County.....	15,714	341	21.7	350	-9	8	3	3	-----
Pike County.....	26,866	456	17.0	599	-143	5	6	9	3
Pope County.....	9,625	90	9.4	215	-125	1	1	1	-----
Pulaski County.....	14,629	228	15.6	333	-105	9	6	8	1
Putnam County.....	7,580	152	20.1	169	-17	1	2	-----	-----
Randolph County.....	29,109	599	20.6	649	-50	14	4	4	1
Richland County.....	14,044	295	21.0	313	-18	5	2	3	-----
Rock Island County.....	93,425	1,763	18.9	2,083	-320	30	21	23	13
<i>Moline</i> .....	31,071	834	26.8	693	+141	6	14	-----	3
<i>Rock Island</i> .....	35,735	481	13.5	797	-516	13	4	18	6
Saline County.....	38,773	552	14.2	865	-313	13	11	10	11
Sangamon County.....	100,738	1,897	18.8	2,246	-349	31	34	30	11
<i>Springfield</i> .....	59,570	1,165	19.6	1,328	-183	21	22	21	6
Schuyler County.....	13,285	291	21.9	296	-5	6	4	2	1
Scott County.....	9,489	132	13.9	212	-80	5	2	6	1
Shelby County.....	29,601	632	21.4	660	-28	11	6	7	4
Stark County.....	9,693	166	17.1	216	-50	1	1	1	-----

—Continued.

6					7	8	9
Deaths of infants under 1 year of age (exclusive of stillbirths).					Deaths of infants under 1 year of age per 1,000 reported live births (re- sultant infant mortality rate).	Estimated infant mortality rate (based on probable number of births occurring).	Difference between resultant and estimated infant mortality rates.
2 months.	3-5 months.	6-8 months.	9-11 months.	Total deaths under 1 year of age.			
		2	3	17	62.0	60.1	1.9
2	2	5	3	39	101.3	79.8	21.5
1	2	3		9	75.6	33.6	42.0
6	20	11	9	128	72.0	57.5	14.5
4	12	5	6	58	870.1	(9)	(9)
2	2	3	3	36	76.3	58.6	17.7
1	7	3	7	54	69.8	53.6	16.2
	3	2	4	25	72.0	66.3	5.7
		1	1	9	50.3	40.0	10.3
3	7	5	5	65	77.5	62.3	15.2
2	4	4	4	46	91.5	89.1	5.4
2	28	9	14	116	91.4	69.1	22.3
2	4	4	9	51	127.8	118.1	9.7
8	23	19	10	153	90.5	73.7	16.8
2	7	2	1	35	899.7	(9)	(9)
	1	2		9	(4)	(4)	(4)
3	9	5	3	35	8191.4	(9)	(9)
3	6	3	3	36	84.9	75.5	9.4
2	5	4	2	38	85.1	69.8	25.1
6	8	4	1	44	55.5	50.5	5.0
2	4	4	4	40	78.3	60.1	17.6
1	2	2	3	23	119.2	86.5	132.7
4	18	9	4	89	61.0	60.7	00.3
4	15	8	4	71	865.2	(9)	(9)
11	15	9	9	92	74.1	71.6	2.5
9	36	29	15	214	95.6	89.1	6.5
1	11	6	5	47	980.6	(9)	(9)
1	7	5	1	36	122.0	107.5	14.5
6	16	8	4	81	101.6	96.5	5.1
2	3	1	2	26	(4)	(4)	(4)
	2			20	75.8	60.8	15.0
1	2	1	3	13	43.5	35.0	8.5
4	7	3	2	29	113.3	96.0	17.3
	2	3	1	35	66.9	57.9	9.0
5	10	3	8	47	89.2	63.5	25.7
4	12	5	7	83	65.8	53.0	12.8
2	8	1	3	36	80.4	55.9	124.5
		1		11	45.8	42.1	3.7
	2		4	20	58.1	47.7	10.4
		2		12	59.4	42.0	17.4
4	7	7	7	60	77.3	64.5	12.8
1	5	6	5	54	90.8	72.1	18.7
	4	3	4	29	109.0	82.6	126.4
4	1	5	1	24	81.4	72.5	8.9
4	5		3	35	75.3	58.5	16.8
10	29	24	9	162	99.4	64.7	34.7
6	8	18	8	134	110.8	78.5	132.3
4	6	6	5	56	113.8	109.4	4.4
2	3	1	1	21	61.6	60.0	1.6
1	6	2	5	37	81.1	61.8	19.3
1	4	1	1	10	111.1	46.5	64.6
2	7	5	3	41	179.8	123.1	56.7
	1	1	1	6	39.5	35.5	4.0
3	4	2	4	36	60.1	55.5	4.6
1	1	2	3	17	57.6	54.3	3.3
11	17	13	12	140	79.4	67.2	12.2
3	6	2	3	37	844.4	(9)	(9)
5	7	6	4	62	128.5	77.8	150.7
1	7	12	13	78	141.3	90.2	51.1
13	21	19	8	167	88.0	74.4	13.6
7	13	13	5	108	82.7	81.3	11.4
	3	2	2	20	68.7	67.6	1.1
	1	2	1	18	136.4	84.9	51.5
4	5	6	3	46	72.8	69.7	3.1
1	1	1		6	36.1	27.8	8.3

TABLE 10A

Area.	1	2	3	4	5	6			
	Esti- mated (revised) popu- lation as of July 1, (mid- year).	Re- ported births.	Birth rate per 1,000 popu- lation.	Prob- able number of births based on rate of 22.3.	Prob- able defi- ciencies or excesses in reports.	Deaths of infants under 1 year of age (exclusive of stillbirths).			
						Less than 1 day.	Less than 1 week.	Less than 1 month.	1 month
St. Clair County.....	137,376	2,568	18.7	3,063	-495	33	45	27	26
Belleville.....	25,014	479	19.1	558	-79	6	11	-----	6
E. St. Louis.....	67,190	1,374	20.4	1,498	-124	23	23	18	11
Stephenson County.....	37,790	674	17.8	843	-169	12	6	5	4
Freeport.....	19,829	427	21.5	442	-15	6	5	3	4
Tazewell County.....	38,772	777	20.0	865	-88	13	15	8	2
Pekin.....	12,199	(4)	(4)	(4)	(4)	5	7	3	1
Union County.....	20,249	414	20.0	452	-38	7	9	4	3
Vermilion County.....	86,583	1,684	19.4	1,931	-247	38	25	18	3
Danville.....	34,080	771	22.6	760	+11	20	17	8	3
Wabash County.....	14,034	309	22.0	313	-4	8	5	3	1
Warren County.....	21,488	394	18.3	479	-85	6	5	5	2
Monmouth.....	8,116	(4)	(4)	(4)	(4)	4	2	2	-----
Washington County.....	18,035	329	18.2	402	-73	3	5	5	1
Wayne County.....	22,772	360	15.8	508	-148	7	2	9	6
White County.....	20,081	384	19.1	448	-64	7	3	6	4
Whiteside County.....	36,260	712	19.6	809	-97	15	14	12	8
Will County.....	93,351	1,632	17.5	2,082	-450	28	35	25	14
Joliet.....	38,636	568	14.7	862	-294	13	16	15	8
Williamson County.....	61,916	1,307	21.1	1,381	-74	34	18	18	11
Herrin.....	11,198	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Winnebago County.....	92,360	1,821	19.7	2,060	-239	25	28	19	10
Rockford.....	66,694	1,518	22.8	1,487	+31	24	23	15	10
Woodford County.....	19,340	486	25.1	341	+55	3	5	17	1
Total State.....	6,528,886	120,360	18.4	145,594	-25,234	1,974	1,932	(6)	(6)
Down State.....	3,800,584	70,057	18.4	84,753	-14,696	1,210	1,007	890	479
Chicago City.....	2,728,302	50,303	18.4	60,841	-10,538	764	925	(6)	(6)

<sup>1</sup> Birth rate U. S. Bureau of the Census Registration Area, 1919.

<sup>2</sup> Derived from columns 4 and 6.

<sup>3</sup> Minus signs show deficiencies. Plus signs show excesses (columns 2 and 4 compared).

<sup>4</sup> Not available. Reported births included in county total.

<sup>5</sup> See Elgin, Kane County.

<sup>6</sup> Not available for all cities in Cook County for these age groups. Deaths for these age groups included in total at (B).

<sup>7</sup> Not available for all cities in Cook County for this age group. Deaths for this age included in total at (D).

<sup>8</sup> Probably true rate.

<sup>9</sup> See column 7.



—Concluded.

6					7	8	9
Deaths of infants under 1 year of age (exclusive of stillbirths).					Deaths of infants under 1 year of age per 1,000 reported live births (re- sultant infant mortality rate).	Estimated infant mor- tality rate (based on probable number of births occurring).	Difference between resultant and estimated infant mortality rates.
2 months.	3-5 months.	6-8 months.	9-11 months.	Total deaths under 1 year of age.			
16	39	33	23	242	94.2	79.0	14.8
1	2	2	3	31	64.7	55.6	9.1
10	27	27	18	157	114.3	104.8	9.5
1	10	7	3	48	71.2	56.9	14.3
1	8	4	2	33	77.3	74.7	2.6
3	7	1	6	55	70.8	63.6	7.2
2	3	1	1	23	(4)	(4)	(4)
1	6	1	3	34	82.1	75.2	6.9
9	18	16	25	157	93.2	81.3	11.9
2	4	9	7	70	890.8	(9)	(9)
3	8	2	1	31	100.2	99.0	1.2
4	3	-----	1	26	66.0	54.3	11.7
1	2	-----	1	12	(4)	(4)	(4)
1	7	2	1	25	76.0	62.2	13.8
1	6	3	6	40	111.1	78.7	32.4
2	9	5	5	41	106.8	91.5	15.3
2	11	10	7	79	111.0	97.7	13.3
8	22	15	12	159	97.4	76.4	21.0
5	10	8	6	81	142.6	94.0	48.6
7	19	19	15	141	197.9	102.1	5.8
(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
15	23	9	11	140	76.9	68.0	8.9
12	17	7	11	119	878.4	(9)	(9)
-----	-----	1	2	29	859.7	(9)	(9)
(9)	(B) 5,186	(7)	(D) 2,526	11,618	96.5	79.8	16.7
353	857	616	532	5,944	84.8	70.1	14.7
(9)	(B) 2,607	(7)	(D) 1,378	5,674	112.8	93.3	19.5

TABLE 11.—PROBABLE DEGREE OF COMPLETENESS OF BIRTH AND DEATH REGISTRATION IN ILLINOIS, CALENDAR YEARS OF 1919 AND 1920 BASED ON BIRTH RATE OF 22.3 (RATE REPORTED FOR FEDERAL REGISTRATION AREA FOR BIRTHS, BUREAU OF THE CENSUS, 5TH ANNUAL REPORT 1919) AND DEATH RATE OF 12.9 (RATE REPORTED FOR FEDERAL REGISTRATION AREA FOR DEATHS, BUREAU OF THE CENSUS MORTALITY STATISTICS, 1919).

Area.	1919				Area.	1920			
	Population estimated (revised) mid-year (July 1).	Probable number.	Actually reported.	Probable degree of completeness.		Population estimated (revised) mid-year (July 1).	Probable number.	Actually reported.	Probable degree of completeness.
The State.....	6,441,674	(Births 143,649 Deaths 83,096)	110,770	.77	The State.....	6,528,886	(Births 145,594 Deaths 84,223)	120,360	.83
Chicago.....	2,675,108	(Births 59,655 Deaths 34,494)	44,051	.73	Chicago.....	2,728,302	(Births 60,841 Deaths 35,195)	50,303	.83
State exclusive of Chicago.....	3,766,566	(Births 83,994 Deaths 48,589)	66,719	.97	State exclusive of Chicago.....	3,800,584	(Births 84,753 Deaths 49,028)	70,057	.99
			44,034	.91				47,291	.83
									.96

TABLE 12.—PROBABLE DEFICIENCIES IN THE NUMBER OF BIRTHS REPORTED FOR THE YEARS OF 1919 AND 1920, FROM THE STATE, CITY OF CHICAGO AND STATE EXCLUSIVE OF CHICAGO.

Area.	Births—1919.				Area.	Births—1920.			
	1919	Based on birth rate of 22.3 per 1,000 population. (Federal Registration Area Bureau of the Census Birth Statistics, 5th Annual Report, 1919).				1920	Based on birth rate of 22.3 per 1,000 population. (Federal Registration Area Bureau of the Census Birth Statistics, 5th Annual Report, 1919).		
		Estimated (revised) population mid-year (July 1).	Actually reported.	Rate per 1,000.			Estimated (revised) population mid-year (July 1).	Actually reported.	Rate per 1,000.
			Probable number.	Deficiency in number reported.			Probable number.	Deficiency in number reported.	
State.....	6,441,674	110,770	143,649	32,879	State.....	6,528,886	120,360	25,234	
Chicago.....	2,675,108	44,051	59,655	15,604	Chicago.....	2,728,302	50,303	10,538	
State exclusive of Chicago.....	3,766,566	66,719	83,994	17,275	State exclusive of Chicago.....	3,800,584	70,057	14,696	

## DIVISION OF CHILD HYGIENE AND PUBLIC HEALTH NURSING.

C. W. EAST, M. D., *Chief.*

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It should be noted that the Division of Child Hygiene and Public Health Nursing has not had its full personnel. The position of supervising nurse has been vacant during the entire year. We have had but two public health nurses.

### CLINICAL SERVICE.

The care of our reconstruction clinics has increased by reason of demands for new clinics and the larger number of patients attending them.

Clinics have been added at Jacksonville and Mattoon, and occasional service has been given at Carlinville. Litchfield and Kewanee have applied for the establishment of clinics. There are now twenty-five clinics on the list of the division. The accompanying table presents in detail the work done during the year. (See Table No. 13.)

It will be seen that several new features appear when compared to previous years. Over twenty-seven hundred patients were cared for, as compared to about fifteen hundred the previous year.

The St. John's Sanitarium, near Riverton, Sangamon County, opened a crippled children's unit in April, 1921, especially for those who need operative and institutional care. In it there are accommodations for forty patients. There has been an average of thirty patients since the opening of this institution. The sanitarium cares for these patients at a per capita cost of \$8 per week. The chief of the Division of Child Hygiene and Public Health Nursing is physician and surgeon in charge, and the cooperative plan begun and developed in our field clinics is continued. The Sangamon County Board of Supervisors and the Bissell school district, in which the institution is located, have opened a public school at the sanitarium where the crippled children have advantages which many of them could not have at home.

Reference to the chart will show that other problems are being met through the twenty-five clinics, besides those of the crippled. An important percentage of the patients present nutritional faults. Others show pathological conditions of wide distribution, not excluding psychopathic and nervous abnormalities. In fact, we believe that these clinics are among the best possible agencies to introduce the entire range of public health interests to the communities of the State. Public health interests helped by them may be enumerated as follows:

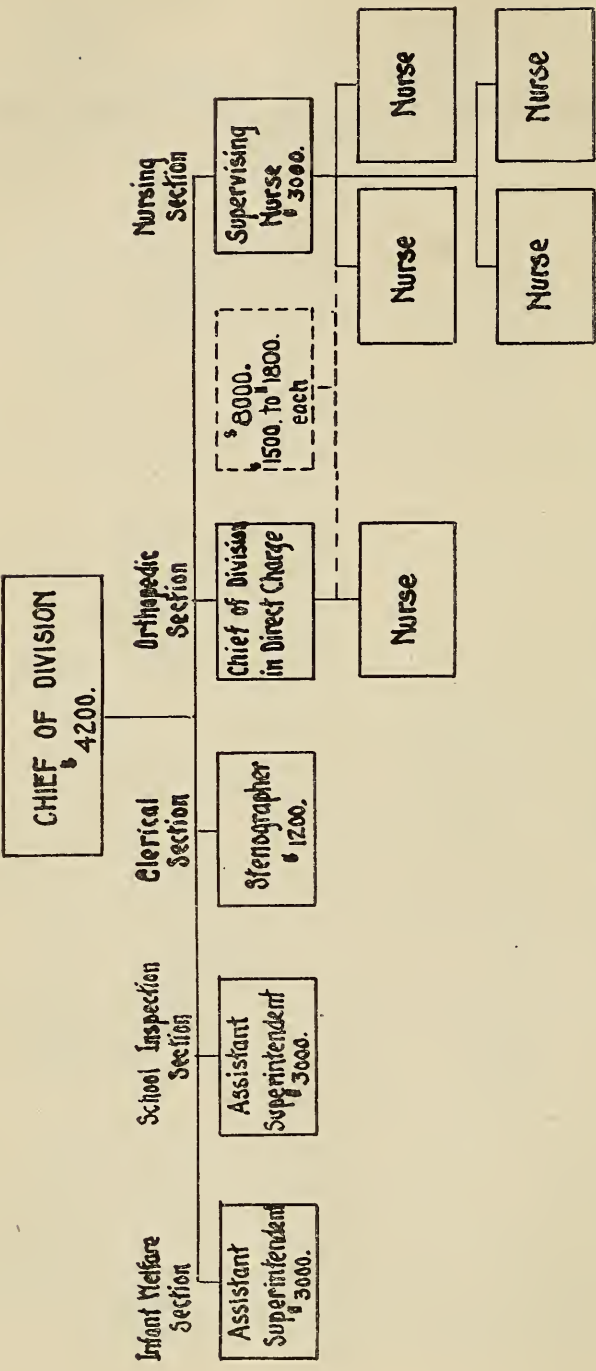


Figure XXI—Divisional Organization for Biennium, 1921-23.



1. They meet adequately the needs of the crippled, especially among the indigent.
2. They furnish help to physicians who cannot take their crippled patients to the centers for orthopedic consultation.
3. They stimulate public health nursing.
4. They broaden the vision and functions of local public health administration.
5. They employ extra-governmental agencies interested in public health in a mutually helpful way.
6. They afford opportunity for observation, advice, assistance and unobtrusive but effective supervision of local public health agencies.
7. They pave the way for public school nursing and medical inspection.
8. They make a point of contact with the public which accrues to the benefit of public health in all its agencies.
9. They assist in numerous cases to call favorable attention and support to other public health efforts such as anti-tuberculosis and social hygiene.
10. They are a standing advertisement of the State Department of Public Health and have widely commended it to favor.

This enumeration is not complete and is not made as an apology, which is needed in no sense, and to no extent, but as correctly a report of one of the principal activities of the division.

#### EDUCATIONAL SERVICE.

No small amount of service has been rendered public health propaganda by the division. All members have taken part in numerous better babies conferences, including that of the State Fair. The activities of the division in this respect have reached from Lake to Jackson Counties, and from Danville to Aledo and Carthage. The nurses have visited numerous communities for conference and advice with local nursing agencies.

In various instances a member of the nursing staff of the division has inducted a new nurse into her duties. This has been especially true in school nursing, the forces of which are recruited largely from private duty ranks.

The division has been responsible for numerous articles in the department publications and the production of several important pamphlets.

Addresses and lectures have been given in every part of the State during the year to groups representing a wide range of professional and civic constituency.

The correspondence of the division is considerable and important. Recognition has come in the way of inquiries and requests for service from every part of the State. The Children's Bureau of the United States Department of Labor has frequently shown interest in plans of the division, and has specifically commended its work.

The relationship of the division to the central division of the American Red Cross, the Chicago Health Department, the Cook County Bureau of Social Service, the Chicago Visiting Nurses Association, the Illinois Tuberculosis Association and the King's Daughters has been cordial, and with the most of these more than casual.

The Shriners, the International Rotary Association, various local units of the Traveling Men's Protective Association and the Union Commercial Traveler's Association have manifested deep and helpful interest.

The division is reaching the public widely and effectively. As this report is closed it has become evident that the legislature has provided adequately for desired increases in personnel and its compensation. This but meets demands which the service has created. The organization chart, which is included in this report, presents graphically the service which the division is now prepared to render. This organization will become effective July 1, 1921.

We record our gratitude and our purpose to enlarge and enhance our service to the State correspondingly.

TABLE 13.

	Number cases in attendance.	Number old cases.	Number new cases.	Number infantile paralysis.	Number tuberculosis.	Number malnutrition.	Number spastic paralysis.	Other orthopedic conditions.	Special and assisted training.	Number given advice as to shoes, braces, casts or other appliances.	Referred to family physician.	Wassermann test.	Number X-ray.	Number operations advised.	Number operated by us.	Number operated by others.	Advised hospital or institutional care.
Alton.....	208	157	51	9	6	22	3	35	29	36	9	7	4	18	1	3	4
Aurora.....	51	34	17	7	1	3	1	6	14	18	1		3	1		1	1
Blue Island.....	38	10	28	9		5		10	7	13		1		5	1		3
Carlinville.....	9		9	4	1			4	4	3			3	4			3
Champaign.....	86	25	61	19	6	11	3	53	23	59	8	5	6	13			7
Cicero.....	65	38	27	19	1	2	3	12	18	30	2		2	5			2
Danville.....	196	126	70	48	8	10	5	44	33	82	13		11	15			7
Elgin.....	79	40	39	9	4	5	2	21	24	22	4	2	3	1			4
East St. Louis.....	61	25	36	26		5	3	18	14	30	5	1	1	7		1	6
Freeport.....	135	81	54	20	3	7		41	24	58	6	3	3	10			2
Galesburg.....	131	55	76	26	1	12	3	44	45	52	5	1	6	25		3	4
Jacksonville.....	23	12	11	5				6	3	5			1	2			3
Joliet.....	132	80	52	17	4	7	4	27	22	54	8	6	6	6		2	2
Kankakee.....	86	54	32	13	3	3	2	22	10	38	3	1	4	4		2	2
Moline.....	73	47	26	9	3	3	1	15	20	29	1	2	2	9			6
Mt. Olive.....	6		6	3				3	1	2	1		1	1			
Monticello.....	39	30	9	1		1	1	6	11	6	3		1	1			1
Mattoon.....	117	45	72	30	5	9	8	35	28	57	10	2	9	13		1	10
Ottawa.....	64	43	21	25		5	1	12	8	34	1	1	3	3			2
Princeton.....	146	78	68	20	7	5	1	36	39	46	10	3	8	11			11
Quincy.....	78	37	41	14	3	8	1	21	12	32	8	1	6	3			6
Rockford.....	39	18	21	13	1	8		8	9	16		3					4
Rock Island.....	51	39	12	9		4		7	11	14	1		1	4			3
Streator.....	98	68	30	9	2	7	1	15	16	29	4		3	3		1	3
Waukegan.....	43	34	9	12	1	2		5	10	25			1	1			3
Springfield.....	689	521	168	75	35	26	5	71	53	199	12	8	31	20	8	5	40
Total.....	2,743	1,697	1,046	451	95	170	48	577	488	999	115	47	122	185	10	19	138

## DIVISION OF DIAGNOSTIC, BIOLOGICAL AND RESEARCH LABORATORIES.

THOMAS G. HULL, Ph. D., *Chief.*

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According to the appropriation made by the Fifty-first General Assembly, the laboratories of the department were divided into two distinct divisions, the Diagnostic Laboratories and the Biological and Research Laboratories. For convenience, however, the personnel of both these divisions has been merged into a unit under the general supervision of one chief, as will be seen in the accompanying chart. The Fifty-second General Assembly made provisions for one chief for the two sections of the division.

The principal function of the laboratories during the past year has been the examination of specimens for diagnosis of the communicable diseases. It has been found impracticable to manufacture biological products, so the money appropriated for this purpose was used for the purchase of these products. The rabies fund was used for services of physicians to administer rabies vaccine and did not entail any burden on the laboratory personnel. The clerical and supply sections have acted in the capacity of "service units" for the diagnostic and biological sections, in preparing reports, keeping records and filling requests for material.

### LAWS UNDER WHICH THE LABORATORIES OPERATE.

Following are abstracts of the laws, passed by the General Assemblies of the State, which affect the laboratories:

An Act to create and establish a Board of Health in the State of Illinois. Approved May 28, in force July 1, 1877. Laws 1877, p. 207. Amended by act filed May 18, in force July 1, 1907. Laws, 1907. p. 537:

The State Board of Health may establish and maintain a chemical and bacteriologic laboratory for the examination of public water supplies, and for the diagnosis of diphtheria, typhoid fever, tuberculosis, malarial fever and such other diseases as they may deem necessary for the protection of the public health.

An act to provide for the treatment and care of poor persons afflicted with the disease called rabies. Approved May 12, in force July 1, 1905. Laws 1905, p. 38:

The overseers of the poor or other officers having charge of the dispensation of public charity in the several counties of this State may hereafter send to an institution within the State of Illinois for the preventive treatment of hydrophobia, such institution to be selected by the State Board of Health, all poor persons duly certified by regular physicians to have been bitten by rabid animals or otherwise put in danger of infection with rabies.

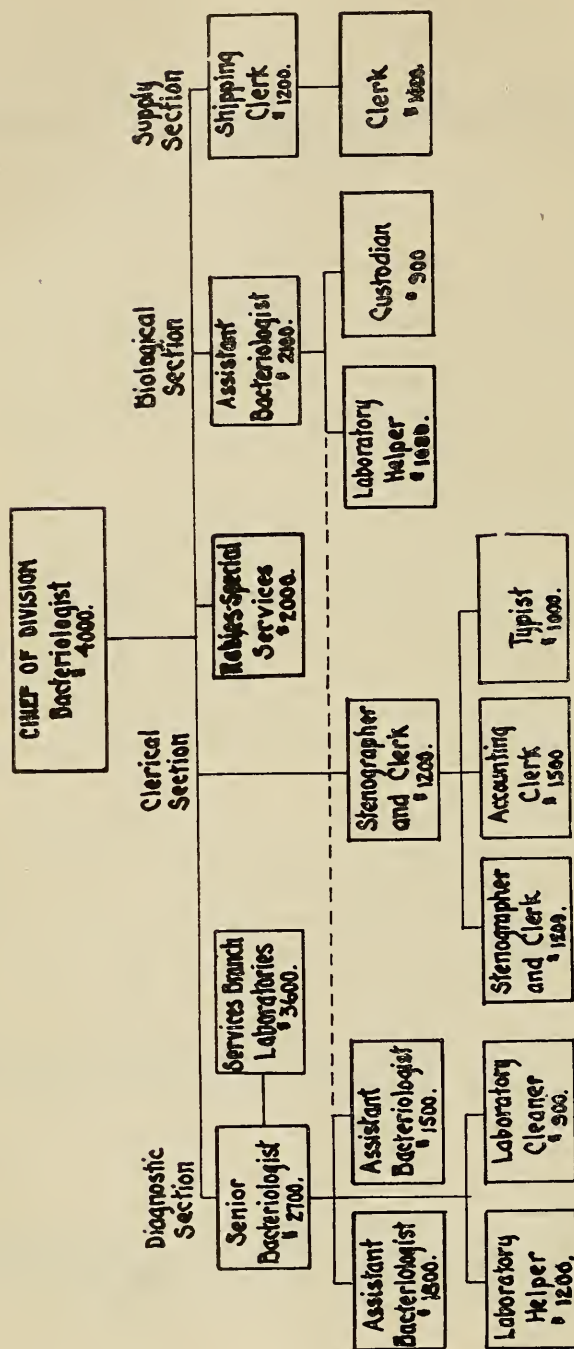


Figure XXII—Divisional Organization for Biennium, 1921-23.



The charges for the services of said institution shall be paid by the State of Illinois at a rate not exceeding one hundred dollars a patient, and there is hereby appropriated the sum of two thousand dollars, or as much thereof as may be necessary to expend, for the purpose of this act.

The Civil Administrative Code (sec. 55, p. 29) gives the Department of Public Health the following powers:

To maintain chemical, bacteriological and biological laboratories, to make examinations of milk, water, sewage, wastes, and other substances, and to make such diagnoses of diseases as may be deemed necessary for the protection of the people of the State;

To purchase and distribute free of charge to citizens of the State diphtheria antitoxin, typhoid vaccine, smallpox vaccine and other sera, vaccines and prophylactics such as are of recognized efficiency in the prevention and treatment of communicable diseases;

To make investigations and inquiries with respect to the causes of disease, especially epidemics, and to investigate the causes of mortality and the effect of localities, and other conditions upon the public health, and to make such other sanitary investigations as it may deem necessary for the preservation and improvement of the public health.

#### DIAGNOSTIC SECTION.

The main laboratories at Springfield made 52,008 examinations during the past year, an increase over the previous year of 65 per cent. It has been necessary to confine the procedures performed quite rigidly to problems with a public health aspect. Tissues sectioning and urine analysis as routine measures have been eliminated. All communicable diseases, however, for which there is a laboratory test have received particular attention. In some instances, as meningitis, very little could be accomplished from a distance, and in the isolated occasions which arose, the emergency did not warrant sending a field laboratory to the spot.

TABLE 14—EXAMINATIONS MADE AT CENTRAL DIAGNOSTIC LABORATORY FOR FISCAL YEAR 1920-1921.

	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Wassermann (blood).....	1,457	1,606	1,466	1,601	1,851	1,817	2,005	2,060	2,287	2,060	2,316	2,752	23,278
Wassermann (spinal fluid) ..	11	31	22	21	21	23	45	46	75	70	69	56	490
Complement fixation test for gonorrhea.....	48	67	74	136	152	121	156	155	207	199	232	321	1,868
Complement fixation test for tuberculosis.....	36	41	57	65	102	100	136	112	166	170	171	220	1,376
Blood for malaria.....	25	7	4	13	8	3	2	7	0	8	3	13	93
Diphtheria cultures.....	75	113	793	806	1,442	2,794	739	356	272	137	129	188	7,843
Typhoid (Widal).....	184	173	189	187	181	194	115	117	87	77	113	147	1,764
Paratyphoid (Widal) A.....	184	165	189	187	181	193	115	117	87	77	113	147	1,755
Paratyphoid (Widal) B.....	184	165	189	187	181	193	115	117	87	77	113	147	1,755
Sputum for tuberculosis.....	546	551	572	562	560	660	689	633	677	778	738	643	7,394
Pus for gonorrhea.....	177	167	230	239	310	282	214	201	245	218	255	284	2,822
Feces for typhoid.....	4	54	34	42	28	7	5	12	42	11	20	11	270
Colloidal gold.....	12	0	0	0	0	0	12	17	28	30	27	15	141
Urine—													
Chemical.....	13	11	14	14	4	0	37	54	68	27	23	19	284
Microscopical.....	13	11	14	14	4	0	37	52	68	27	34	21	295
Spinal fluid—													
Chemical.....	3	2	0	0	3	0	11	16	11	27	16	9	98
Microscopical.....	3	1	0	0	3	0	11	16	11	26	18	9	98
Miscellaneous.....	62	19	9	16	18	54	17	45	56	34	16	38	354
Total examinations.....	3,037	3,184	3,856	4,100	5,051	6,339	4,423	4,189	4,429	3,952	4,406	5,040	52,008

In Table 14 is a list by months of examinations made at the main laboratories at Springfield.

The branch laboratories have been of increasing service, but due to a limited appropriation, it has been necessary to confine their efforts to the diagnosis of diphtheria. These branch laboratories could be infinitely more useful if they were put on a salary basis instead of a piece-work basis as now, with the understanding that all diphtheria cultures must be examined, whether for diagnosis, quarantine release or inspection. It would also be advantageous to have branch laboratories at rail centers like Chicago and East St. Louis, for the examination of all specimens submitted. The time consumed in getting back reports on specimens submitted would be infinitely shorter, making the small extra expense well worth while.

In Table 15 is a list of branch laboratories, their location, the bacteriologist in charge and the number of diphtheria examinations made during the last year:

TABLE 15—EXAMINATIONS MADE AT BRANCH LABORATORIES FOR FISCAL YEAR 1920-21.

	Diphtheria examinations.
North Branch, Chicago—(Dr. T. C. Abel, 7 W. Madison).....	2,804
South Branch, Mt. Vernon—(Dr. W. H. Gilmore).....	2,218
Northwest Branch, Moline—(Dr. Maude J. Vollmer, Lutheran Hospital)	1,012
North Central Branch, Ottawa—(Dr. Roswell Pettit, Illinois Valley Laboratory).....	232
East Branch, Urbana—(Dr. F. W. Tanner, Chemistry Building).....	710
West Branch, Galesburg—(Dr. S. G. Winter, Bank of Galesburg Bldg.)	985
Total, 1920-21, all branches.....	7,961
Total, 1919-20, all branches.....	3,412
Total, 1918-19, all branches.....	3,058

The total examinations for all laboratories during the past year was 59,969 as against 37,509 for the year before and 15,061 for the preceding year.

Besides examinations made at the various State laboratories, the department has cooperated with private and municipal laboratories by supplying culture media, thus making it possible to have the work done locally with quicker and better reports. It also took away from the personnel of the State laboratories the strain of examining large numbers of cultures at a time when they were already overcrowded with work. During the year, 4,125 tubes of culture media were distributed, besides mailing containers and supplies.

#### BIOLOGICAL SECTION.

For several years past, it has been the hope of the Department of Public Health to obtain suitable quarters and sufficient personnel to produce the biological products required for distribution throughout the State. At the present time this practice seems inadvisable and the necessary biologics are being purchased under contract from reputable commercial laboratories. The personnel of the biological laboratory is engaged in diagnostic work, in the checking up of biologics purchased

and in research work. It is hoped that eventually, sufficient help will be obtained in the diagnostic section so that the biological laboratory staff may devote its time to necessary research work and to the care of biologics purchased.

Table 16 shows a list of biologics purchased during the last year with the approximate amount of money paid in each instance:

TABLE 16—BIOLOGICS PURCHASED DURING FISCAL YEAR 1920-21.

Diphtheria antitoxin .....	\$57,347.58
Triple typhoid vaccine.....	2,415.79
Silver nitrate .....	2,130.00
Anti-anthrax serum .....	292.50
Schick test material.....	30.76
Total .....	<u>\$62,216.63</u>

During the coming year toxin-antitoxin (for vaccination against diphtheria) will be added to the list of products named above and will also be distributed without cost to citizens of the State.

The appropriation for biologics is entirely inadequate. During the past year, an emergency appropriation was passed by the Fifty-second General Assembly for \$30,000 to enable the department to finish out the year, the fund for these products having been completely exhausted when the year was half over. The demand for these products is growing constantly, as it should. In no other way can the State save lives with the expenditure of so little money as by furnishing an adequate supply of preventive and curative biologics. Probably the coming year will see the fund entirely exhausted and the distribution of such material temporarily stopped.

#### SUPPLY SECTION.

The supply section is engaged principally in the distribution of mailing containers for the submission of specimens to the various laboratories. This work is more important than it might seem to a casual observer. It is necessary not only to keep all sections of the State supplied with the various kinds of containers, but to see that all containers sent out are in proper condition. Carelessness in the matter of Wassermann containers might mean many badly infected arms from improperly sterilized needles.

Specimen containers are sent to more than four hundred antitoxin agents throughout the State, to clinics and dispensaries, and to private physicians as requests come in from them. Six different specimen containers are now in use, (1) a sterile test tube for specimens of blood and spinal fluid (sterile bleeding needle included), (2) a vial containing creosol solution for specimens of sputum for tubercle bacilli, (3) a vial containing 30 per cent glycerin for specimens of urine, blood or feces to be cultured for typhoid bacilli, (4) a sterile cotton swab for throat cultures, (5) microslides for pus and blood smears and (6) parchment paper for blood for Widal tests.

In Table 17 is shown the number of mailing containers sent out during the last year.

TABLE 17—MAILING CONTAINERS DISTRIBUTED FROM JULY 1920 TO JUNE, 1921.

For.	Sputum.	Wasser- mann.	Micro- scope slides	Diph- theria.	Widal.	Feces.	Others.	Total.
July.....	737	2,056	380	391	262	207	9	4,062
August.....	1,051	2,036	322	325	189	186	12	4,111
September.....	916	2,601	273	547	264	76	5	4,682
October.....	1,230	2,642	599	2,927	503	51	13	7,965
November.....	913	2,342	546	6,467	288	44	48	10,648
December.....	802	2,504	311	2,830	147	9	45	6,648
January.....	1,622	2,935	907	2,870	438	475	-----	9,258
February.....	877	2,271	422	1,292	165	97	15	5,139
March.....	1,158	3,640	493	683	162	167	6	6,309
April.....	1,151	2,268	352	491	184	148	8	4,602
May.....	918	3,738	629	715	180	61	12	6,253
June.....	794	2,604	490	692	233	79	-----	4,982
Total.....	12,179	31,718	5,724	20,230	3,035	1,600	173	74,659

Total for fiscal year 1920-21.....	74,659
Total for fiscal year 1919-20.....	36,524
Total for fiscal year 1918-19.....	11,009

As will be seen from a comparison between Table 17 and Tables 14 and 15 the number of mailing containers distributed is considerably in excess of the specimens received. While a few containers without doubt find their way to other laboratories, still the discrepancy is mainly accounted for by expansion. The number of containers sent out on the average equals the number of specimens received six months later.

The distribution of biological products which would normally come under the supply section is done by the Division of Communicable Diseases. The latter division formerly handled these products and has all the necessary machinery for this work, therefore, a change is inadvisable.

The distribution of specimen containers in emergencies is a matter requiring special attention. While the various antitoxin agents have a small supply of containers on hand at all times, very often it is necessary to telegraph in for a greater supply in cases of epidemics. Under the present system the field men and district health officers of the department may be delayed for two days in accomplishing a given task while waiting for the supplies to come by mail from Springfield. Distributing stations at rail centers such as Chicago and East St. Louis would save many hours of time in emergencies such as epidemics. These distributing stations could be installed at the branch laboratories at those places.

#### CLERICAL SECTION.

The function of the clerical section is to report promptly the results of all examinations made in the laboratories, to keep proper records of all examinations made and, in conjunction with the Division of Communicable Diseases, to keep records concerning the distribution of the



biological products. In addition to the above service, duplicate copies of reports have been sent to the Division of Communicable Diseases, the Division of Social Hygiene and to the district health officers.

#### RABIES SECTION.

The Fifty-first General Assembly appropriated \$4,000 for the biennium for services in treating persons bitten by dogs suspected or proved to be rabid. Of this money, \$2,522 was expended in two years. The present system consists in sending patients unable to pay for treatment to a hospital in Chicago, where the county pays the travel and living expenses and the State pays for the services of administering the anti-rabic vaccine. In such instances an attendant must accompany the patient, entailing double expense for the county besides the inconvenience for all concerned of bringing all such patients to one place. A much more efficient system would be to allow the patients to be treated at home, or in the nearest hospital, the local physician receiving the material for treatments by mail.

#### RESEARCH.

Among the functions of the Biological and Research Laboratories are the search for improvements in the laboratory diagnosis of the communicable diseases and the study of the manner and spread of diseases. Because of the pressure of other work no great amount of time could be given to research, but, as opportunity has permitted, three different matters have been taken up. The Sachs-Georgi precipitation test for syphilis has been studied carefully and some modifications made which warranted the publication of a paper on the subject (*Journal of Immunology*, Vol. 6, November, 1921, p. 521).

The study of anthrax in shaving brushes resulted from the accidental infection of a man from a newly purchased brush. From fifty-eight brushes examined, thirty-five showed contamination with the anthrax organism. These were all cheap brushes made of horse hair. Of twenty-three higher priced brushes not one showed such contamination.

The study of poliomyelitis in relation to paralyzed animals was undertaken after several instances came to the attention of the department where cases of poliomyelitis developed on farms two or three weeks after certain of the farm animals became paralyzed. The study included chickens, hogs, and horses. The problem was not solved, however, and no definite conclusions drawn from the work done.

#### EDUCATIONAL WORK.

Every opportunity has been seized to disseminate information concerning the spread and control of the communicable diseases. The division took part with the rest of the department in the exhibits at the State Fair and at the Health Show in Chicago. At various times, the

chief of the division has furnished articles for publication in "Health News" and has filled speaking engagements. From time to time some of the public schools have desired culture media for use in class work and cultures of some of the non-pathogenic bacteria for demonstration purposes. These requests have been filled. Besides nurses and physicians who have spent from a few hours to several weeks in the laboratory for instruction purposes, several classes conducted by the United States Public Health Service for the study of tuberculosis were conducted in the laboratory for the discussion and demonstration of laboratory diagnosis of tuberculosis.

#### MONETARY VALUE OF WORK OF DIVISION.

Through efficiency in grouping operations and through reduced overhead costs from large volumes of work, the laboratories have been able to cut the cost of making laboratory examinations to a minimum. For instance, a Wassermann test ordinarily costing \$5 is done for less than 40 cents, this including the cost of the mailing container and the stenographer's time and postage for sending the report. The biological products purchased are obtained through competitive bidding far below what an individual must pay. In Table 18 is given a summary of the assets and liabilities of the division.

TABLE 18—ESTIMATED ASSETS AND LIABILITIES OF THE DIVISION OF LABORATORIES FOR THE FISCAL YEAR 1920-21.

Laboratory examinations valued at commercial rates.....	\$212,583.00	
Biological products distributed valued at market price.....	296,682.75	
Services for rabies vaccine.....	1,261.00	
Estimated total assets.....		\$510,526.75
Cost of operating laboratories including salaries.....	\$19,466.04	
Cost of biological products purchased.....	62,216.63	
Cost of rabies vaccine.....	1,261.00	
Total liabilities .....		82,943.67
Profit to State of Illinois.....		\$427,583.08

From this table it will be seen that the laboratories did an estimated amount of almost half a million dollars worth of business with an estimated profit to the State of more than four hundred thousand dollars.

#### DEVELOPMENT OF LABORATORIES.

It was in 1904 that the Board of Health, with money appropriated for sanitary investigations, secured the services of a bacteriologist and opened a laboratory for the examination of sputum for tubercle bacilli, cultures for diphtheria bacilli, blood for Widal tests and blood for malaria parasites. Since that time the laboratories have occupied quarters in five different locations and been directed by twelve different chiefs. In spite of this fact, they have grown steadily both in scope and value of work,—from 1,425 total examinations in 1905 to 59,969 in the year just passed.

It was about 1914 that the first branch laboratories were opened and in 1919 that the Biological and Research Laboratories were added,

with a fund for procuring biological products. (Biological products were distributed at cost from 1905 to 1909, then distributed free, the money being appropriated from other funds).

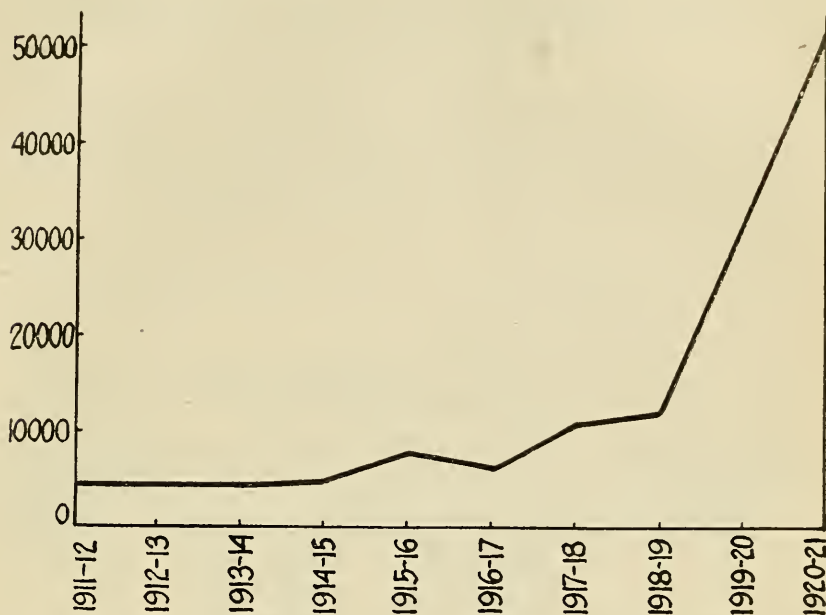


Figure XXIII—Total Examinations Made at Diagnostic Laboratories, 1911-21.

In Table 19, and Figure XXIII, growth of the main laboratory at Springfield, is indicated by the total number of specimens examined in the last ten years:

TABLE 19—TEN YEARS GROWTH OF THE MAIN LABORATORIES.

	Total examinations.		Total examinations.
1911-12.....	4,249	1916-17.....	6,013
1912-13.....	4,442	1917-18.....	10,499
1913-14.....	4,222	1918-19.....	12,003
1914-15.....	4,611	1919-20.....	31,494
1915-16.....	7,579	1920-21.....	52,008

This rapid development is constantly bringing up new problems—quarters, personnel, appropriations, laboratory supplies. The very near future must solve many of them.

#### FUTURE DEVELOPMENT.

The last two years have seen a very rapid rise in laboratory work. Using as an index the number of mailing containers distributed in excess

of the number of specimens received during the last six months of the year (January to June), an increase of 40 per cent in the number of specimens received may be expected the coming year. The present personnel is adequate to care for this increase but the laboratory quarters are unsuitable. Already part of the laboratory force has been crowded out of the State House into the laboratories five miles north of the city, which were intended for production of biological products. This separation of the laboratory force is most unsatisfactory, as a five mile trip by automobile is required to get from one laboratory to the other and no adequate telephone service exists. Prompt reports in emergency cases are almost impossible to obtain under these circumstances.

Among the objects to be worked for and the problems for solution in the future are the following:

- a. More adequate quarters for the main laboratory so that the force will not have to be divided.
- b. The extension of branch laboratories to cover the State more fully and payment upon a salary basis.
- c. The establishment of branch laboratories at such rail centers as Chicago and East St. Louis, which will be capable of making all examinations, thus affording quicker diagnoses, and relieving the congestion at Springfield.
- d. The establishment of distributing stations for specimen containers at Chicago and East St. Louis.
- e. The relief from diagnostic work of the biological section so that it may indulge in research, and the control of the biological products purchased.
- f. The distribution of rabies vaccine to local physicians, making it unnecessary to send patients bitten by rabid dogs a long distance for treatment.
- g. A better organization of the laboratory service in the department, which service at present is scattered throughout the divisions.
- h. Fuller cooperation with local laboratories, both private and municipal, to insure better laboratory service in the various localities around the State.



## DIVISION OF PUBLIC HEALTH INSTRUCTION.

B. K. RICHARDSON, *Chief.*

For a number of years the activities that logically come under the functions of the Division of Public Health Instruction have been accomplished largely through the cooperation of various other divisions. With a complete change in the personnel during the fiscal year ending June 30, 1921, all of these activities have been assumed by the division. This change has resulted in a decided increase in the efficiency of carrying out the regular work and in an extension of the service rendered.

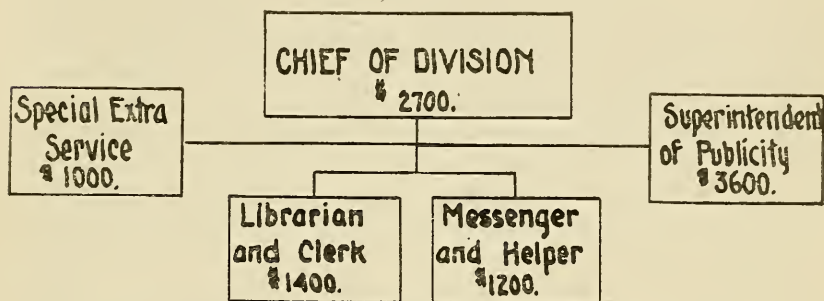


Figure XXIV—Divisional Organization for Biennium, 1921-1923.

Realizing that the ultimate success of public health service depends primarily upon education, every activity of the division has been planned and carried out with the end in view of disseminating in popular form the latest and most scientific thought in reference to the control and prevention of disease and the promotion of health.

Services rendered along these lines are almost purely educational in character and fall naturally into two sections, routine and special. This report is divided under these two headings, with an additional section on recommendations.

### ROUTINE.

The most important regular work of the division is the publication of "Health News," the monthly bulletin of the department. Beginning with February, 1921, the bulletin has for the first time since the signing of the Armistice, been issued regularly during the early part of each month. Its style has been changed so that each number carries a symposium on some important and seasonal health subject, together with

discussions and statistical information relative to the prevalence of communicable diseases and the trend of public health administration in the State. The mailing list has been revised so that it now embraces a total of more than 13,000 names that include not only practically all physicians in Illinois, outside of Chicago, but thousands of lay workers as well. Its readers are found in every part of the world and its popularity finds expression through many letters of appreciation and a constantly increasing demand for its wider circulation. Its subject matter has been used freely not only by periodicals of almost every kind, but by the daily press as well.

Besides "Health News" the division issues and distributes special bulletins dealing with particular subjects. During the year 112,000 pamphlets of this kind were printed. They deal with the subjects of sanitation, infant and child care, tuberculosis, scarlet fever and general public health information for school children. In response to specific requests more than 200,000 pieces of literature, consisting of these and other pamphlets, were distributed through the division. When to this number is added that included in the various issues of "Health News," the grand total reaches 332,000 pieces. The significance of this service is all the more pronounced by reason of the fact that no attempt has been made to send these pamphlets indiscriminately or broadcast over the land, but every effort has been made to limit their distribution in such a way as to insure the greatest amount of educational and practical results.

The loan service constitutes a more and more important function of the division. In it is maintained exhibit equipment that includes motion picture films, lantern slides, posters, wall panels, cuts of public health cartoons and mechanical and still models. These are all available for public use without cost other than transportation charges one way. This material, with the exception of the models, which are shown largely during the fall months in connection with county fairs, has been constantly in use by various communities throughout the State. Due to the increased efficiency of the division all of the equipment, save that of the models, was used much more extensively during the second half of the year than was the case for the first half, or for any previous similar period. Table 20, at the end of this section, indicates the number of showings by months for the several different types of exhibit material and shows the decided increase that marked its utilization during recent months. In addition to the displays already made an unusually large number of reservations have been made for exhibitions during the first half of the coming fiscal year.

The remaining regular duties of the division may be classified under the headings of publicity, library service of the department and editing of division reports. The first consists of special material prepared for the daily press, for periodicals, for a weekly press service and

for daily and weekly newspapers. Two medical journals (one weekly and one monthly), a monthly public health journal and more than 800 daily and weekly newspapers, are regularly supplied with material of current value through this function. The matter submitted has been constantly utilized and doubtless has worked to the distinct and permanent benefit of the public.

The department library service has been so completely reorganized that it actually constitutes a new work. Beginning with the month of February, the periodicals for which the department subscribes are, upon receipt, loaned immediately to those members of the department staff who are most interested in the subject matter treated in particular publications. Articles of special merit are abstracted and the latter are kept on file in the division office. In this way the personnel of the department is kept in easy touch with current public health literature and the periodicals are more extensively read.

The third service mentioned includes the receipt and editing of reports, monthly, semi-annual and annual from the other divisions of the department. These are compiled in popular and readable form and published either in "Health News" or in special form.

The following tabulation shows by months the number of showings of the various types of exhibit material and the number of pieces of literature distributed, the number of books and periodicals taken from the library, and the number of letters written. Attention is particularly invited to the large increase along all lines for the latter part of the year:

TABLE 20.

1920-1921.	Films.	†Literature.	Posters.	Slides Sets.	Cuts.	Modcls.	*Books and Periodicals.	*Letters Written.
July.....	6	250			2			
August.....	12	500	244	1	4	1		
September.....	30	500	120	1	1	2		
October.....	4	500	60		4			
November.....	25	11,000	10		5	1		
December.....	33	1,500	50	1	2	1		
January.....	49	7,304	130		2		126	94
February.....	21	3,365	25				110	95
March.....	47	10,267	124		4		119	131
April.....	42	85,000	288	3	20	1	113	515
May.....	43	50,000	257	1			110	165
June.....	27	25,000	100		6		111	298
Total.....	345	200,186	1,652	7	50	6	859	798

\* Records kept for last six months only.

† Monthly bulletin not included.

## SPECIAL.

Four particular events constituted special work carried out by the division during the year. These relate to a State wide better babies conference, health promotion week, two displays of the entire exhibit equipment of the department, and the arrangement for health demon-

strations in connection with the Pageant of Progress in Chicago and the State Fair of Springfield.

The better babies conference is an annual event conducted by the department in connection with the State Fair at Springfield. This division is responsible for all the work incident thereto except that of the actual examinations and the consultation service that follows. In arranging for the conference the division not only prepared special rules, application blanks and score cards, but carried out a publicity program that resulted in the largest and most successful conference that was ever undertaken by the department. The total number of children examined was 756 compared with 250 for the first conference in 1915, and 542 for the fourth conference in 1919. The growth of the institution has been due to the fact that it has admirably fulfilled the educational purpose for which it was created and to the vigor with which the division has handled the work relative thereto from year to year. Nor has the growth of the movement been confined to the State conference alone. Local communities have come to realize the importance of creating a lively interest in the welfare of children and have followed the department in stimulating such interest through the medium of better baby conferences.

During the year the division furnished score cards and other material information relative to organizing and carrying out conferences to twelve different communities besides numerous other places where conferences were held in connection with health promotion week. This is mentioned for the reason that this widespread interest on the part of the people in a movement so significant and important, demonstrates to the department that a broad field of service is now open and that through the better baby conference movement a vast amount of educational service can be accomplished that otherwise would be almost, if not wholly, impossible. Indeed, with the interest displayed during the latter part of the year in work of this kind, it is not too much to anticipate that a few more years will see the better baby conference with as definite a place in the program of every county fair in the State, as live stock now holds.

Health promotion week is also an annual project. Each year, either by legislative resolution or by proclamation of the Governor, a week is set aside for the study of public health problems and the promotion of health. The State Department of Public Health is charged with the duty of carrying out a suitable program on a State wide basis and this division is responsible for the success of the undertaking. This year the week designated was April 17-23, and the campaign was put in motion with more vigor than at any previous time since the inauguration of the event. It is significant to note that the week was generally observed throughout the State, although the campaign work was accomplished through the division without unusual or special expense and



with but a limited amount of help from other divisions of the department. More than 8,300 individual letters were sent out by the division to health officers, mayors, nurses, school superintendents and principals, members of women's clubs, Y. M. C. A. and Y. W. C. A. officials and others. In addition to this the daily press was supplied with publicity material for two weeks in advance and during the entire week, while a considerable quantity of literature was prepared and issued in pamphlet form. Altogether more than 85,000 pieces of literature were distributed and the exhibit material of the department was in constant use during the week. Communications from 119 communities brought the information that a definite program was carried out in that number of places, and doubtless many other localities observed the occasion in an appropriate way. Perhaps the most encouraging feature of the program grows out of the success of the movement in stimulating during the week the establishment of some permanent public health service. That this was done in many places has been proved by subsequent developments and the fact that public health nursing service and better baby conferences have been put on a permanent basis in many places.

Not least in importance of the special work done by the division during the year was a display of the entire exhibit equipment at the State Fair and at the Coliseum in Chicago. While only a relatively limited number of the people in the State can be reached on these occasions, still the presentation of fundamental health principles by means of mechanical and still models makes such a pronounced and lasting impression on all who see them that it is felt to be an important educational medium. As a result of the two demonstrations mentioned above the division has received thousands of requests for detailed information along the lines suggested by the exhibit. Many requests also for the use of the exhibit material from both local communities and agencies in other states have been received.

The closing of the year finds the division engaged in two important pieces of work, the arrangement for an unusually elaborate public health demonstration in connection with the Pageant of Progress to be held on the Municipal Pier in Chicago, and the preparation for the Sixth Annual Better Babies Conference to be held at the State Fair in Springfield. For the first of these the division has supervised the purchase and in most cases the construction of fifteen new models, eight of which are mechanical, and has made all provisions for carrying out the demonstration. The models have been built in a manner that makes them suitable for future use, and these together with three new films and fifty-two new wall panels recently purchased, give the department an unusually large and up-to-date equipment that is believed to be one of the most complete in the country.

The second piece of work embraces the State better babies conference. Practically all of the material is on hand and arrangements have been made to open the publicity campaign.

#### RECOMMENDATIONS.

Two reasons explain why the most urgent recommendation of this division is for an increase in personnel. These are the unusual growth and popularity of the better babies conference movement and the widespread demand for public health demonstrations. Both offer exceptionally effective means for educating the public in constructive public health work and preventive medicine, and the practical usefulness of the former is limited only by the ability of the department to introduce and establish it in the right way. If the department fails in this duty local baby conferences will be established without its assistance and in many instances they will be conducted in the form of a show without giving the educational benefits for which the movement was originally inaugurated, and to gain which constitutes the only practical reason for its continuity and extension.

It is, therefore, strongly recommended that two full-time nurses be attached to the division. Their duty will be to visit local communities that request such service and see that better baby conferences are organized and carried out upon the high standard and in the practical way established by the State Department of Public Health. Their services will relieve the division of the necessity for calling upon other divisions for personal assistance of this kind, that has in the past been given, often at the expense of neglecting other important work. When not needed for this type of work, which is heaviest during the seasons of the year (from April to October) when better baby conferences are most practical, they would be available for duty under the State supervising nurse.

The exhibit equipment now consists of such an extensive amount of material and the demand for its use is so widespread, that an assistant is needed to supervise its handling, care and exhibition. In addition he would be expected to make schedules for health demonstrations.

With these additions the personnel would be ample not only to extend its educational service along every line during the next biennium but at the same time develop greater efficiency.

## DIVISION OF SOCIAL HYGIENE.

G. G. TAYLOR, M. D., *Chief.*

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Since its creation on July 1, 1918, the Division of Social Hygiene has functioned in a capacity designed to suppress, control and eradicate venereal diseases. Each succeeding year has made more and more apparent the startling prevalence of these diseases and has demonstrated to a high degree the value of and necessity for the work carried on by the division.

The first year of its existence the division was furnished wholly by the Federal Government, from which source, it drew and expended \$66,307.51. During the next two fiscal years, the second of which ended June 30, 1921, it received jointly from the Federal and State funds \$100,000 annually. Early in 1921, however, it became known that Congress had refused to make further appropriations for this service on the grounds that social hygiene programs at their inception, were war measures and no longer justified Federal aid and also had become so firmly established in many sections of the country and had so demonstrated their economic and social importance, that states generally would feel impelled for the public good to continue and extend these activities.

This was the case in Illinois. More than a score of clinics had been established upon a subsidy basis and their continuity depended, in most cases, upon favorable legislative action whereby sufficient funds would be made available to affect the stoppage of Federal aid. Not only was the existence of the clinics in jeopardy, but the expansive educational program that had been a leading feature in the venereal disease campaign faced the possibility of serious curtailment. The situation was presented to the Fifty-second General Assembly by the newly appointed Director of the department and that body saw fit to increase the State appropriation for the division from \$50,000 to \$100,000 per annum, so that the venereal disease program as outlined and instituted by the department will be continued in all of its essential features during the coming biennium.

For the fiscal year just closed the work of the division proceeded along lines established at the outset. These conform, in general, to the venereal disease program suggested by the Inter-departmental Social Hygiene Board, which board was created by act of Congress for the purpose of administering funds appropriated for venereal disease control. The functions of the division are classified, as shown in the accompany-

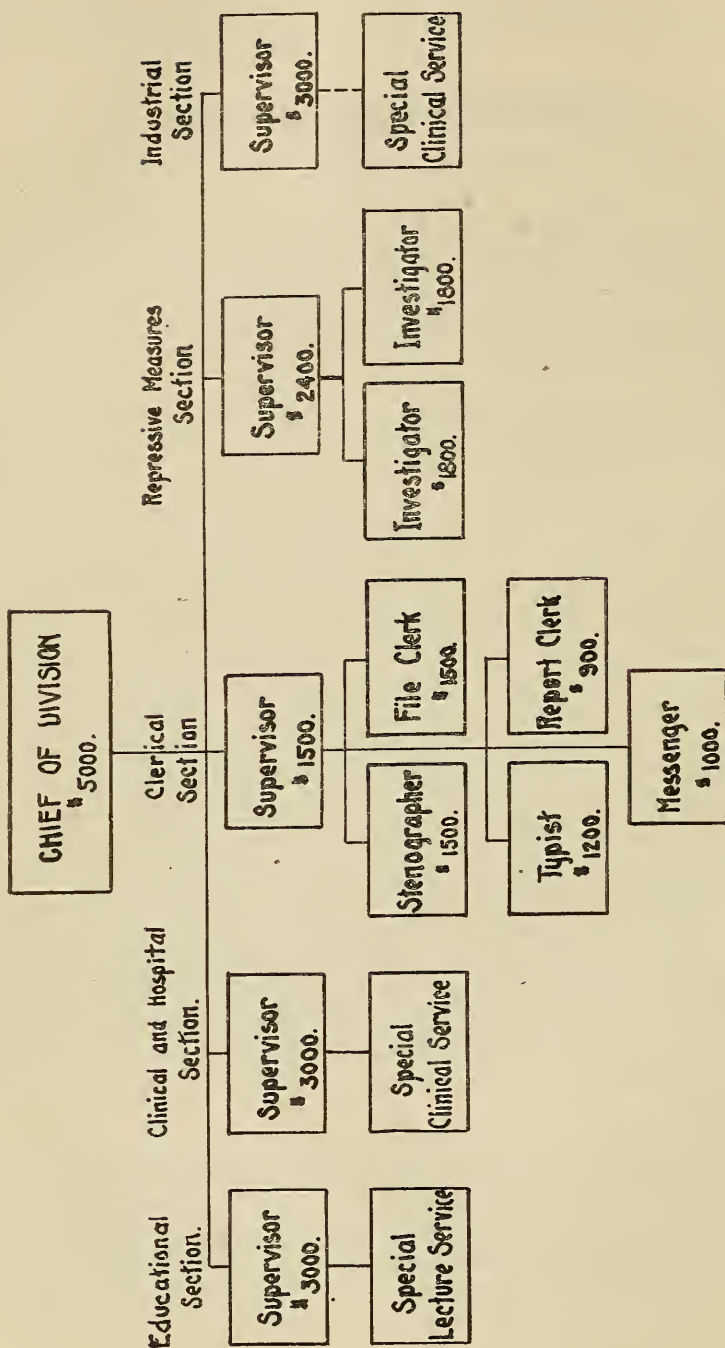


Figure XXV—Divisional Organization for Biennium, 1921-1923.



ing chart, under the headings of treatment, repressive measures and educational measures.

#### TREATMENT.

Since every case of venereal disease arises by contagion, direct or indirect, it follows that early and thorough treatment of infectious cases must have an important preventive action. In other words, the widespread provision of facilities for prompt treatment is a measure not only beneficial to the individual concerned, but also of exceedingly great importance as a protective measure to the community in which he lives.

The division has, therefore, persistently worked for the establishment and maintenance of free clinics for all sufferers who are financially unable to secure the services of a reputable physician. At the close of the year eighteen such clinics were in operation under the direction of the division. They were all working upon the subsidy plan whereby the division and the community bear jointly the expenses and which was described in detail in the third annual report. No new clinics were established under the division during the year for the reason that the necessary funds for subsidizing them were not available. On the other hand, every effort has been made to secure the greatest possible efficiency from those in operation and to encourage the establishment of clinics without subsidy. That the efficiency was greatly improved is demonstrated by the fact that a total of 37,254 persons were treated for venereal disease infection during the year against 30,005 for the year before.

The clinics established are designed to offer:

First, the examination of all pathological material for diagnostic purposes;

Second, provision for the modern forms of treatment for all venereal diseases;

Third, free supply of salvarsan or its substitutes in suitable cases;

Fourth, opportunities for consultation on cases between the directors of the clinics, district health officers, and any practitioner who cares to avail himself thereof;

Fifth, opportunities for physicians and students to familiarize themselves with modern methods of diagnosis and treatment.

Clinics in operation at the close of the fiscal year are located at Alton, Cairo, Carlinville, five in Chicago, Chicago Heights, Decatur, East St. Louis, Litchfield, Moline, Peoria, Rockford, Rock Island, Springfield and West Hammond.

The work accomplished at these clinics during the year is summarized as follows:

	Male.	Female.
Patients hospitalized . . . . .	211	151
Number patients discharged . . . . .	3,007	1,269
Number patients discontinuing treatment . . . . .	2,724	1,554
Number patients placed in detention . . . . .	47	195
<hr/>		<hr/>
Total number cases of disease treated . . . . .		37,254
Total number treatments administered (including arsphenamine) . . . . .		135,075
Number Wassermann tests . . . . .		21,120
Number of microscopic examinations for the treponema pallidum . . . . .		1,130
Number of microscopic examinations for the gonococcus . . . . .		14,373
Number of doses of arsphenamine administered . . . . .		27,634
Number of ampoules arsphenamine distributed by division . . . . .		19,618

The following is a tabulation (Table 21) of complete venereal disease reports received by the Illinois Department of Public Health for the year ending June 30, 1921:

	Gonorrhea.	Syphilis.	Chaneroid.	Total.
Age—				
1-12.....	53	80		133
12-16.....	84	121	5	210
16-20.....	735	301	39	1,075
20-30.....	2,579	1,326	167	4,072
30-40.....	673	598	57	1,328
40-50.....	237	310	16	563
50 and over.....	87	182	13	282
				7,663
Sex—				
Male.....	3,528	1,889	263	5,680
Female.....	920	1,029	34	1,983
				7,663
Color—				
White.....	4,096	2,324	247	6,667
Black.....	352	594	50	996
				7,663
Social status—				
Single.....	3,145	1,432	223	4,800
Married.....	1,045	1,037	42	2,124
Widowed.....	117	207	14	338
Divorced.....	141	242	18	401
				7,663
Place—				
City.....	3,431	2,298	235	5,964
Town.....	1,017	620	62	1,699
				7,663
Occupation—				
Business man.....	209	86	10	305
Chauffeur.....	105	54	9	168
Clerk.....	338	174	19	531
Cook or waiter.....	66	98	3	167
Farmer.....	244	146	10	400
Idle.....	447	396	16	859
Laborer.....	2,004	922	171	3,097
Mechanic.....	108	79	14	201
Miscellaneous.....	809	839	42	1,690
Prostitute.....	118	124	3	245
				7,663
Laboratory finding —				
Positive.....	2,588	2,159	60	4,807
Negative.....	124	161	53	338
None.....	1,736	598	184	2,518
				7,663
Residence—				
Boarding House.....	1,014	579	105	1,698
Home.....	3,045	1,875	163	5,083
Hospital.....	86	123	8	217
Hotel.....	173	138	12	323
Institution or jail.....	130	203	9	342
				7,663
Source of infection—				
Contracted.....	3,904	2,322	246	6,472
Inherited.....	544	596	51	1,191
				7,663
Investigated.....	488	302	140	930

	Gonorrhea.	Syphilis.	Chancroid.	Total.
Stage—				
Primary or acute.....	2,973	847	124	3,944
Secondary or subacute.....	591	851	89	1,531
Tertiary or chronic.....	884	1,220	84	2,188
				7,663
Discontinued employment.....	720	546	64	1,330
Handling foodstuffs.....	121	136	4	261
Patients under treatment.....	4,448	2,918	297	7,663

Number complete reports received from physicians from which above tabulation was made.....	7,663
Number incomplete reports received from physicians, druggists, State institutions, clinics and the Chicago City Health Department.....	30,240
Total cases reported for the year ending June 30, 1921.....	37,903
Total cases reported for the year ending June 30, 1920.....	31,876

## REPRESSIVE ACTIVITIES.

It was pointed out in the third annual report that in order to prevent the spread of venereal diseases it is necessary to render non-infectious every carrier of these diseases and to prevent contact between healthy and diseased persons. Efforts to accomplish the first of these, it was shown, came unquestionably under the jurisdiction of health departments while activities bearing upon the second proposition always meet with considerable opposition.

Public opinion in this country has long since been directed against open prostitution for it has been recognized fully that such practice constitutes an easy opportunity for the widespread exposure of healthy persons to venereally infected persons. On the other hand, investigations have shown that clandestine prostitution has gone on apace and that the most rigid measures are necessary to prevent the segregation and public operation of persons engaged in this nefarious business. In many cases the local officials simply wink at such practice and unless pressure is brought to bear from some State source the laws that prohibit prostitution are of no avail.

During the year, therefore, the suppressive work of the division has been directed chiefly toward securing the cooperation of city and county officials in law enforcement. This has been done through the investigation of vice conditions and the presentation of information thus obtained to the local authorities. Forty investigations of this kind were conducted during the year in various parts of the State with the result that 930 sources of infection were brought to light and the persons placed under treatment. In five instances the municipal officials saw fit to pass local ordinances so that such cases can be prosecuted with more dispatch in the future.

Legal control measures have been greatly strengthened during the year because of court decisions in several cases. In North Carolina the Supreme Court affirmed a judgment allowing a wife to recover damages in the sum of \$10,000 from her husband because he had infected her

with a venereal disease. In Oklahoma a man was sentenced to five years in the penitentiary for infecting a girl with syphilis. A Nebraska court upheld a doctor who had warned an hotel keeper that one of his patients, a guest at the hotel, had syphilis and had refused treatment and was consequently a menace to the public health. All three cases are valuable in counteracting incorrect opinion that the venereal disease law falls almost exclusively on women and in placing personal responsibility for the transmission of venereal disease. The Nebraska case carries particular significance since it asserts that a physician's duty to protect the public health may, under certain circumstances, transcend his duty to hold his patient's confidence inviolable.

Following is a summary of the suppressive activities of the division during the year:

Number of State laws passed during period (appropriation).....	1
Number of city ordinances passed during period.....	5
Number of prosecutions of violators of ophthalmia neonatorum law.....	2
Number of vice investigations .....	40
Number sources of infection investigated and placed under treatment.....	930

#### EDUCATIONAL WORK.

In considering what can be accomplished by educational methods in checking venereal disease, it is desirable to arrive at an understanding as to what is meant by education. Mere instruction in the presentation of definite facts is not really education. The real problem of education should be restricted to its literal sense of leading the mind in the proper habits of thought and a right outlook on the problems of life. In this way education can be of use only indirectly by helping to guide the activities of individuals toward a right standard of conduct. In other words, education must aim at developing the self control necessary to keep in check the sexual instinct and at inculcating into the individual sound principles of social morality; in addition to this, instruction in the facts relating to venereal disease and its many consequences to the individual and the race. Education along these lines is a process which must be begun early in life as a foundation on which to base a knowledge of the subject.

There are two separate propositions to consider, first, in what way the general scheme of education can be reinforced so as to make a higher standard of conduct; second, whether, and if so, how far actual instruction in the facts of biology and venereal disease should be introduced into the educational system of the adolescent.

The first step should be taken in early life while the child is entirely under parental control. Parents should be encouraged to realize that their responsibility begins early. A successful system of education should aim not only at equipping young people with a knowledge of facts but also at moulding character along the lines best adapted for developing them into useful citizens. Early teaching in these matters forms a vital part in the standard of conduct for the years to follow. The ideals thus established should form the basis of future action.



The subject of sex should be taught from a scientific standpoint with the elimination of the intensively personal application that is so apt to hamper its approach under the usual conditions of today. The instruction should be not merely a scientific one, the sentimental or emotional side of the subject should also be made use of in an endeavor to implant sound ideals of sexual conduct. Chivalry, the protection of the weak, the sanctity of maternal devotion, should play their part in the building up of such ideals. In the opinion of this division it is to the teachers, elementary and secondary, that we must look for the sex education of the children of today.

The second problem in education, namely, instruction in the facts of biology and venereal disease, requires careful consideration. To what extent a knowledge of such principles has any influence in developing character along moral lines is still a question. More careful instruction should be provided in regard to moral conduct as bearing upon sexual relations throughout all grades and types of education. Such instruction should be based on moral principles and spiritual considerations, and should not be based only on the physical consequences of immoral conduct. It would perhaps be a good practice for medical men to conduct classes in general hygiene and to use these classes for the purpose of presenting the necessary information on these subjects.

If a medical man is selected to conduct classes in general hygiene the instruction should include:

- (a) A description of the two diseases, gonorrhea and syphilis, with their complications, sequelae, and the effects on the offspring;
- (b) Insistence on the need of early and sufficient treatment, the danger of concealment, and the danger from use of quack remedies;
- (c) Prevention guaranteed only by keeping out of the way of possible infection;
- (d) Exposure of the fallacy that only professional prostitutes are dangerous—in many cases, the amateur is equally or more dangerous;
- (e) Denunciation of the idea that continence is ever harmful and that continence is an essential attribute of manliness;
- (f) The contributory effect of alcoholic indulgence by diminishing self control.

With the firm conviction that permanent and lasting benefits in the control of venereal diseases can accrue only through educational measures, no matter how important treatment and suppressive measures may be, the division has given a constantly increasing amount of time and thought to this important function. To the educational methods employed in the past was added, during the year, the publication of a monthly bulletin, known as the Social Hygiene Monthly.

The first issue of the bulletin was published September 1, 1920. Since that time it has been in the mails promptly on the first day of each month. It was created for the purpose of establishing a closer relationship between the practicing physicians of the State, the assistants operating venereal disease clinics and other persons particularly interested in social hygiene and the Division of Social Hygiene. The mailing list contains the names of practically all physicians in Illinois, outside of Chicago, as well as numerous others. That it has filled its mission well and rendered a service far more beneficial than the author had

dared hoped, has been generously demonstrated in the practical results that have followed and in the most favorable recognition of its value by the United States Public Health Service and others.

The lecture work of the division has been carried on vigorously and effectively. Altogether 311 lectures and addresses, or an average of more than one daily, with Sundays and holidays excluded, have been made during the year, with a total attendance of 67,938. Many of these lectures were illustrated with the motion picture films and stereopticon slides owned by the division. In addition to this thousands of pieces of literature have been distributed and several social hygiene demonstrations made.

#### EDUCATIONAL SUMMARY.

Number of lectures and addresses given.....	311	
Attendance .....		67,938
Number of days slides and charts shown.....	81	
Attendance .....		180,988
Number film showings without lecture.....	54	
Attendance .....		13,600
Total attendance .....		262,526
Number of requests for pamphlets received.....		5,173
Number of pamphlets distributed .....		306,241
(a) In response to specific requests.....	180,253	
(b) By circularizing mailing lists.....	79,727	
(c) To clinics, lecturers, field workers.....	46,261	
Number of pamphlets purchased and reprinted.....		150,500
Number of exhibits purchased .....		34
Number of films purchased .....		2
Number of booths purchased .....		2
Publicity material—number of references to venereal disease work noted in newspapers and magazines.....		107

#### COMPARATIVE STATEMENTS OF THE ACTIVITIES OF THE DIVISION OF SOCIAL HYGIENE FOR THE YEARS ENDING JUNE 30, 1919, 1920 AND 1921.

Number of.	1919	1920	1921
Clinics subsidized.....	6	20	(a) 18
Clinics reporting.....	6	32	(b) 26
Cases hospitalized.....	0	1,360	(c) 362
Wassermann tests.....	0	13,090	21,120
Microscope tests for gonococci.....	0	8,732	14,373
Cases discharged as cured.....	172	2,624	4,276
Cases discontinuing treatment.....	0	3,296	4,278
Cases treated.....	3,926	30,005	37,903
Treatments given.....	9,304	98,754	135,075
Slides and chart showings.....	49	322	*81
Attendance at same.....	15,750	49,387	180,988
Lectures.....	284	572	(d) 311
Attendance at same.....	28,400	97,357	67,938
Film showings.....	250	(e) 126	(f) 54
Attendance at same.....	37,500	18,112	13,600
Pamphlets distributed.....	370,000	654,205	306,241
Cases reported—			
Gonorrhea.....	3,223	4,275	4,448
Syphilis.....	851	2,329	2,918
Chancroid.....	126	306	297

#### REMARKS:

- Waukegan Clinic discontinued February, 1921. Grand Crossing Clinic—State subsidy ceased June 30, 1920.
- Thirty-three clinics reported during first six months; twenty-six reported during second six months.
- Patients report regularly for treatment but are not hospitalized.
- (d), (e), (f) and (g)—Appropriation insufficient, necessitating reduction in personnel.

## DIVISION OF LODGING HOUSE INSPECTION.

WILLIAM W. McCULLOCH, *Superintendent.*

### INSPECTIONS.

During the period covered by this report, July 1, 1920, to June 30, 1921, considerable time has been devoted to the measuring and inspecting of lodging houses, boarding houses, taverns, inns and hotels of record. There were also several houses measured and inspected of which there was no previous record.

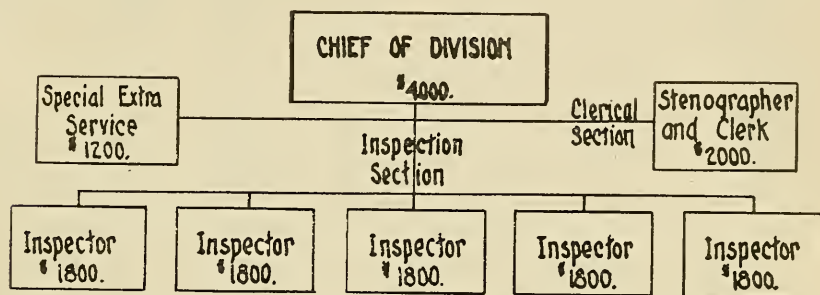


Figure XXVI—Divisional Organization for Biennium, 1921-23.

The number of lodging houses, boarding houses, taverns, inns and hotels inspected, measured and remeasured is as follows:

	Measured.	Remeasured.
1920—		
July.....	18	24
August.....	49	26
September.....	67	39
October.....	83	44
November.....	117	14
December.....	124	10
1921—		
February.....	5	—
March.....	15	—
April.....	7	—
May.....	16	2
June.....	34	24
Total.....	535	185

The inspections of said lodging houses, boarding houses, taverns, inns and hotels showed the total number of rooms to be 16,943; number of lodgers 11,738; present capacity 20,334 and legal capacity 39,353.

For the same period the inspectors reported 122 lodging houses, boarding houses, taverns, inns and hotels as having gone out of business, 67 vacant and 19 torn down.

Below is shown the number of lodging houses, boarding houses, taverns, inns and hotels in which a supplemental inspection was made, together with the number of rooms inspected, the number of lodgers at time of inspection and the number of lodgers for which there were sleeping accommodations:

	Supplemental inspections.	Rooms.	Lodgers.	Present capacity.
1920—				
July.....	168	3,144	2,367	4,354
August.....	214	3,270	2,331	4,362
September.....	211	3,259	2,456	4,460
October.....	167	3,000	2,452	4,170
November.....	52	809	465	911
December.....	130	8,797	7,879	11,802
1921—				
January.....	2	31	19	37
February.....	3	37	30	51
March.....	51	2,114	1,828	3,201
April.....	17	381	265	549
May.....	48	1,215	756	1,424
June.....	170	2,661	1,779	3,704
Total.....	1,233	28,718	22,627	39,025

During the months of January and February, 1921, the inspectors served notices on proprietors and managers of lodging houses, boarding houses, taverns, inns and hotels to file a sworn statement required to be filed March 1 each year. The inspectors served 6,308 notices on proprietors and managers of houses, which had residing therein 105,194 persons.

In April and May, 1921, the inspectors served 2,386 second or final notices on proprietors and managers of lodging houses, boarding houses, taverns, inns and hotels which had 25,931 guests therein. Proprietors and managers of these houses had failed to file with the county clerk the sworn statement required by the Department of Public Health to be filed March 1.

During the period of time covered by this report, 5,409 sworn statements were filed with the county clerk by the proprietors, keepers or managers of lodging houses, boarding houses, taverns, inns and hotels. The inspectors have from time to time been assigned to work in the office of the county clerk in connection with the filing of these sworn statements with the county clerk, and making copies thereof for the department.

On November 24, 1920, at the request of the Director of the department, Inspectors Charles H. Buenneke and William J. Angsten were assigned to work at the Coliseum in Chicago, and from November 24 to December 1, assisted with the exhibit of the Illinois Department of



Public Health in that building. Inspectors Edward B. Kirkbride and Edward Matthes also assisted November 30 in taking down and packing this exhibit for shipment.

June 6, 1921, Inspector Charles H. Buenneke submitted to me his resignation as lodging house inspector, the same to become effective June 10, 1921, and it was accepted.

The inspectors while making their inspections have found numerous violations of the public health laws pertaining to lodging houses, boarding houses, taverns, inns and hotels. These violations, which consist of over-crowding and insanitary conditions such as defective and leaky plumbing, lack of ventilation in sleeping rooms, filthy toilets, walls, floors, beds and bedding, inadequate water supply for toilet and other plumbing fixtures, and accumulations of rubbish and debris in basements, hallways and rooms, have been reported to me by the inspectors, and I have caused a written notice to be served by the inspectors on the proprietor of each house where such violation was found, directing that the management put the premises in sanitary condition and otherwise comply with the provisions of the Board of Health Act. In each case from three to ten days have been allowed in which to correct the conditions of which complaint was made. Most of these houses have been reinspected since the serving of such notices and the inspectors' reports show that the violations formerly complained of have been corrected.

## DIVISION OF SURVEYS AND RURAL HYGIENE.

B. K. RICHARDSON, *Acting Chief.*

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During the fiscal year that closed June 30, 1921, the Division of Surveys and Rural Hygiene lost its identity as an independent division and was made a part of the Division of Sanitation and Engineering. Prior to this change, however, which took place in February the division undertook and carried out a complete sanitary survey of the city of Quincy. The study was exhaustive and comprehensive in character. It led to recommendations that were offered as a practical means for solving many of the existing sanitary problems and for giving the city a well balanced and efficient public health service.

Steps have been taken for carrying out these recommendations in a large measure. A full-time medical health officer has already been employed and the machinery established for developing a well rounded department of public health. Funds to the sum of about \$18,000 or about 50 cents per capita have been made available for health work for the current fiscal year. The full adoption of the recommendations submitted will find Quincy with one of the best municipal public health organizations in the State.

The report of the survey is presented herewith.

### GENERAL INFORMATION.

Quincy is situated in Adams County on the east bank of the Mississippi River. The back country is of the more fertile section of the rich agricultural districts in Illinois and depends on Quincy to market a large percentage of its varied products.

The transportation facilities of Quincy are very good. Two railroad systems, the Wabash and the C. B. & Q., offer the city the advantages of rapid rail transit while river traffic is still considerable.

Quincy has a population of 35,978, according to the preliminary 1920 census returns. This shows a net decrease of 609 since 1910 when the census returns indicated a population of 36,587. The decrease in population is, no doubt, explained in part at least, by reason of the very low birth rate that prevails in Quincy coupled with the inroads upon the citizens by the influenza pandemic and the war casualties. It may be further observed that Quincy experienced no abnormal modification or change in character or size of population on account of war activities.

The people of Quincy come mostly from sturdy American stock. English and German extractions appear in about equal numbers. There is also a negro population of a little more than 1,000.

A close observer will detect a character of thrift that permeates the entire city. This trait applies to the German element almost to a fault.

Politics play a considerable part in the life of the city. This seems to be rather more true than usual in such communities. Perhaps the reason for this is found in the fact that the leading parties are almost equally divided so that community effort and community progress as such is rather hard to obtain.

Most of the progressive life in the city associates itself with the Chamber of Commerce and with the business men's clubs. Almost every measure of a progressive and permanent character finds birth in these organizations and depends upon them for support.

Quincy is an industrial city. Over two hundred products are made there and of these more than a score are manufactured in considerable quantity. Such things as foundry products, stoves, pumps and compressors, tractors, steel and wooden wheels, elevators, shoes, show cases, cereals, incubators, stock foods, strawboard and paper dyés, tobacco and wagons are among the more prominent of these products.

#### PUBLIC HEALTH SERVICE.

Public health service in Quincy is administered at present, through what is known as the Health Department. This department consists of the Board of Health, Commissioner of Health and his office assistant.

The Board of Health serves without pay and is composed of the mayor, who is its president, two aldermen and two physicians appointed by him. Monthly meetings of the board are required by city ordinance.

The working force of the health department consists of the Commissioner of Health and his office assistant. The commissioner is not a medical man and confines his activities to placarding houses for quarantine and the making of sanitary inspections. Since the size of the city makes frequent and regular inspections by one man a prohibitive task the commissioner is able to give his attention only to those conditions that warrant no delay in abatement.

The organization for public health administration has been changed in character and personnel from time to time depending largely upon party politics. With the arrival of May 1, 1921, the beginning of a new fiscal year in Quincy, however, public health administration will be organized under a State law on a permanent basis. Beginning at that time there will be available, annually, a sum of from \$20,000 to \$40,000, depending upon the tax assessment, that can be used for public health purposes only. The State law provides adequately for efficient personnel and equipment. The new administration will also be removed largely from the influence of local politics.

The city maintains no public nursing system whatever. Milk and food inspection is left entirely to the infrequent visits of State inspectors. School children are without medical inspection; neither nurse nor physician is employed for this important work. The city provides pest houses for contagious disease patients but no hospital facilities are available for them.

Extra-governmental agencies maintain two full-time nurses who do visiting nursing throughout the city. There is also a county tuberculosis nurse paid by the Red Cross but she spends very little time or effort in Quincy.

The county maintains a splendid tuberculosis sanitarium located about two miles out of Quincy. The plant is a magnificent institution but its value and importance seems not to have been fully appreciated by the citizens of Quincy and the county.

#### FINANCIAL TREATMENT.

During the past four fiscal years the expenditures by municipal government for fire, police and health protection have been as follows:

TABLE 22—FOR THE FISCAL YEAR ENDING APRIL, 30.

	1917	1918	1919	1920
Fire Department.....	\$51,332.78	\$51,429.09	\$66,539.31	\$78,384.74
Police Department.....	35,936.51	40,768.89	42,739.51	56,757.51
Health Department.....	6,767.57	2,762.94	4,020.00	3,395.26

The expenditures listed in the table indicate that fire and police protection have been practically considered of much greater importance than health protection. The figures are taken from the official annual report of the city of Quincy. The average annual expenditure during the four years for the fire department was \$61,921.53; for the police department \$44,050.02; for the health department \$4,236.44. These totals correspond to an average annual per capita expenditure for the three departments as follows:

TABLE 23—AVERAGE ANNUAL PER CAPITA EXPENDITURE.

Fire department .....	\$1.72
Police department .....	1.22
Health department .....	.11

Extra-governmental agencies have been spending approximately \$5,000 per annum during the same period.

Estimates of the tax levy for health work in the future indicate that about \$18,000, or approximately 50 cents per capita, will be available for the new health department at its inauguration next spring.



## BIRTHS.

A part of the sanitary and health survey in Quincy dealt with birth registration. In the course of the house-to-house canvass incident to the survey it was determined that births are being reported about 98 per cent complete. Figures for the calendar years 1916-1919 inclusive show births reported as indicated in the following table. The table gives also the birth rates per 1,000 of population based upon a population of 35,978.

TABLE 24.

	1916	1917	1918	1919
Number of births.....	567	567	618	536
Rate per 1,000 population.....	15	15	17	14

The figures in the table indicate an average annual birth rate slightly more than 15 per 1,000 population or an increase in population from births of about 1.5 per cent.

The table below shows the number of births reported and the average annual birth rate per 1,000 population by wards. It also gives totals of births and rates for the city for the years indicated.

TABLE 25—BIRTHS BY WARD AND YEAR AND ANNUAL BIRTH RATE.

Ward. -	1916	1917	1918	1919	Total.	Average annual birth rate.
1.....	74	94	77	67	312	15.9
2.....	54	42	59	44	199	10.6
3.....	60	83	86	84	322	17.2
4.....	99	114	115	97	425	17.0
5.....	104	95	114	100	413	15.8
6.....	120	102	115	98	435	17.9
7.....	47	37	52	46	182	15.4
Total.....	567	567	618	536	2,288	-----
Annual rate.....	15.7	15.7	17.1	14.8	-----	15.8

A comparison shows that the birth rate in Quincy falls noticeably short of that which prevails in some other Illinois cities of similar size and character. During the same period when Quincy had a rate of 15.8, Alton had 22.8, Decatur 19.7 and Moline 19.5. Still more significant is the fact that while Quincy had an exceptionally low birth rate she had a death rate higher than that of Illinois cities generally. Facts about mortality appear elsewhere in this report.

## INFANT MORTALITY.

The infant mortality rate in Quincy has averaged considerably less than that for the United States Registration Area during the years

1916-1919, inclusive. This may be accounted for in part, however, because of a completeness in registration of births in Quincy that is rather exceptional.

The table below indicates the number of deaths of infants under one year of age and the death rate per 1,000 of births for the years considered.

TABLE 26—NUMBER OF DEATHS UNDER ONE AND ANNUAL RATE.

(Exclusive of stillbirths)

	1916	1917	1918	1919	Total.
Number of deaths.....	56	46	57	37	196
Rate per 1,000 births.....	98.7	81.1	92.2	69	85.6

The figures in the table show that infant deaths fluctuate from year to year with the various influences that affect the lives of babies. At present Quincy supports no infant welfare stations and but little work is now being done upon the lines of infant welfare.

The table below gives the number of deaths and the average annual death rates of infants under one year of age by wards for the years considered:

TABLE 27—INFANT DEATHS AND DEATH RATES BY WARDS AND YEARS.

(Exclusive of stillbirths).

Ward.	1916	1917	1918	1919	Total.	Average annual rate.
1.....	5	6	10	3	24	76.9
2.....	9	3	6	1	19	95.4
3.....	2	7	10	5	24	74.5
4.....	7	15	10	6	38	89.4
5.....	20	5	10	10	45	108.9
6.....	11	6	5	10	32	73.5
7.....	2	4	6	2	14	76.9
Total.....	56	46	57	37	196	-----
Annual rate.....	98.7	81.1	92.2	69	-----	85.6

The cause of death of the babies in Quincy shows that the influenza pandemic affected infants but little in a direct way. On the other hand the high infant mortality rate that prevailed in 1918 brings out the point that the conditions of parents and adults influence the health and lives of babies to a much larger extent than is commonly recognized.

The table below gives the causes of death of infants in Quincy during the years 1916-1919 inclusive. The classification is that of the International List of Causes of Death:

TABLE 28—CAUSES OF INFANT DEATHS UNDER ONE YEAR.

Cause of death.	1916	1917	1918	1919	Total.
Diarrhea and enteritis.....	3	8	6	4	21
Congenital debility and malformation.....	31	19	36	18	104
Pneumonia.....	4	3	2	1	10
Broncho pneumonia.....	4	1	0	6	11
Acute bronchitis.....	4	3	3	1	11
Influenza.....	1	1	2	3	7
Measles.....	1	0	0	0	1
Disease of larynx.....	1	0	0	1	2
Syphilis.....	0	0	2	0	2
Sudden death.....	3	3	1	0	7
Convulsions of infants.....	1	2	0	1	4
Diphtheria.....	1	1	0	0	2
Disease of heart.....	0	1	0	0	1
Meningitis.....	1	0	0	0	1
Disease of stomach.....	1	0	1	0	2
Other diseases.....	0	4	4	2	10
All causes.....	56	46	57	37	196

Diarrhea and enteritis are shown first in the table because they are considered as positively preventable. An experiment over a period of several years in Richmond, Virginia, and two exhaustive experiments in New York City have unquestionably proved that diarrhea and enteritis in infants are closely connected with the prevalence of house flies and filth. In the Richmond experiment illness and mortality due to diarrhea were reduced in a direct ratio to fly extermination. The same results were obtained in New York City where two city blocks, almost identical in size and character of population, were selected for study. It is also well known that deaths among infants from diarrhea vary directly with the fly seasons. Deaths from these causes begin to increase with the coming of spring and reach a maximum in August when the fly is found in the greatest numbers.

The number of deaths caused by congenital debility and malformation leads the list. This frightful mortality arises largely from ignorance on the part of prospective mothers and a lack of prenatal care.

All the other causes listed are largely preventable. Indeed there is the instance of a certain city in Alsace-Lorraine where infant welfare developed to the point that for periods of more than a year no deaths occurred among infants. Even in our own country there are large numbers of instances where cities have reduced infant mortality by half and in some cases by two-thirds. These examples are 'proof enough that infant deaths are a waste of human life that can certainly be saved by means of efficient infant welfare service.

One of the most essential prerequisites to efficient infant welfare service is complete and prompt registration of births. This is true because complete birth reports inform the health department of all cases where assistance of one kind or another may be needed to preserve the life and health of mother and child. Immediate reports inform the health department of births at the time when assistance is most valuable.

Early and proper care of infants not only greatly increases the babies' chances for life but also for health. A large percentage of blindness, for example, can be prevented by the use of silver nitrate solution at birth. Other important means for increasing the prospects of infants for health and happiness are at the disposal of an adequate health department. Therefore, it is of especial importance that physicians should be encouraged in making prompt and complete birth reports to the end that all the medical forces of the community may closely cooperate in the great work of preserving life and promoting health.

#### MORBIDITY.

Communicable diseases, with a few exceptions, appear to be reported fairly completely in Quincy. This conclusion is reached after rather careful estimates based on death records from certain diseases. The most important exceptions to the approximately complete reporting are pneumonia, venereal diseases and tuberculosis.

In the case of pneumonia and tuberculosis the number of deaths in a year is generally greater than the number of cases of these diseases reported. The very limited venereal disease incidence reported in Quincy compared with that in various other Illinois cities would seem to indicate a disparity of reports.

There is also the exception of light or apparently insignificant cases of communicable diseases that escape the record books. During the survey, for example, there was a widespread wave of something like dysentery that carried with it, in severe cases, characteristics of typhoid or paratyphoid fever. It was variously diagnosed by local physicians who called it dysentery, summer cholera, paratyphoid, etc. Indeed there were some ten or twelve cases of typical typhoid fever that followed closely upon the heels of the less serious epidemic.

A study of local records dating back to 1912 indicates that the more common of communicable diseases such as diphtheria, scarlet fever, smallpox, measles, etc., have usually been allowed to run their course after making their appearance in the city. This is due, no doubt, to the fact that the health department has never been sufficiently manned to cope properly with the health problems of the city and the salaries paid have not been sufficiently large to attract men able to carry out epidemiological investigations.

The table below shows the number of cases of certain diseases that have been reported since 1912:



TABLE 29—CERTAIN DISEASES REPORTED IN QUINCY BY YEARS.

Diseases.	1912	1913	1914	1915	1916	1917	1918	1919	1920*	Total.
Smallpox.....	21	5	115	216	2	59	243	11	27	699
Measles.....	4	28	3	0	815	190	191	10	10	1,251
Chickenpox (not reported prior to 1915).....				17	54	39	19	23	39	191
Whooping cough (not reported prior 1918).....							95	41	14	150
Diphtheria.....	49	41	22	26	45	71	63	30	24	369
Scarlet fever.....	4	1	4	5	7	22	19	76	69	207
Typhoid fever.....	1	15	41	7	7	18	16	13	2	120

\* Reports for 1920 include first 10 months only.

The table above does not include a large number of influenza cases that were reported in 1918. Pneumonia and tuberculosis do not appear in the table because reports were insignificant compared with the number of deaths from these causes.

While the number of cases of the various diseases reported, as indicated in the table, doubtless falls considerably short of the actual incidence in the several cases, yet these figures serve to show that little preventive steps have been taken to eliminate them from the city. Strict quarantine and exhaustive epidemiological work are essential to prevent the appearance and spread of communicable disease. It is of little or no value to have complete reports of communicable disease incidence unless the information thus acquired is utilized as a guide for effort that will safeguard the community against the spread and recurrence of such diseases. On the other hand a health department is like a ship at sea without a rudder when it attempts to function without prompt and complete reports of communicable disease incidence. Progress in community health promotion and disease prevention depends very largely upon the active cooperation of the local health department with the medical profession and there is every reason to believe that such cooperation can be readily obtained in Quincy.

#### GENERAL MORTALITY.

Mortality from all causes among residents only in Quincy appears to be slightly in excess of that in Moline, Illinois, a city similar in size, character and location. It also appears to be considerably higher than the rate for the State of Illinois and slightly higher than that for the United States Registration Area regardless of the fact that both residents and non-residents are considered in the two latter instances.

TABLE 30—DEATH RATES FROM ALL CAUSES PER 1,000 POPULATION.

Year.	1916	1917	1918	1919	Average.
Quincy/Number deaths.....	553	512	650	401	-----
Rate.....	15.3	14.2	18	11.1	14.6
Moline rate only.....	-----	11.2	17.5	11.3	13.3
Illinois rate only.....	13.2	13.8	16.3	12.0	13.8
U. S. Registration Area rate only.....	13.9	14.0	18.0	-----	15.3

The average rate, as shown in the table, is higher for Quincy than for any of the other units except the United States Registration Area. In the case of the latter, figures for 1919 are not available so that this unit has the disadvantage of a high rate for 1918, resulting from influenza, and is unable to offset the increased rate by a decidedly lower rate in 1919 as is the case with the other units.

The rather excessive death rate in Quincy as compared with the other units listed in the table above may be somewhat explained by the fact that several institutions for old people are located there. These institutions accept applicants from various parts of the country and while some of those admitted become citizens of Quincy, still the system results in segregating the aged and consequently influences somewhat the local death rate. However, this influence over the general death rate becomes almost negligible when the number of deaths are considered with reference to age. A little more than 45 per cent of the deaths in Quincy during the four years studied occurred among citizens under 50 years of age.

A serious feature of the rather excessive death rate in Quincy is that it almost offsets entirely the increase in population from births. The table below compares the number of births and deaths that occurred among residents in Quincy during the four year period 1916-1919:

TABLE 31—NUMBER OF BIRTHS AND DEATHS, RATES PER 1,000 POPULATION.

Year.	1916	1917	1918	1919	Total.
Number of births.....	567	567	618	536	2,288
Number of deaths.....	553	512	650	401	2,116
Birth rate.....	15.7	15.7	17.1	14.8	-----
Death rate.....	15.3	14.2	18	11.1	-----
Average annual birth rate for period.....	-----	-----	-----	-----	15.8
Average annual death rate for period.....	-----	-----	-----	-----	14.6

The table shows that the population in Quincy increased from births at the rate of 1.6 per cent over a period of four years and that it decreased from deaths at the rate of 1.5 per cent during the same period. In other words there were only 172 more persons born than died among the residents of the city in four years. This would make an average yearly increase in population from births of only 43.

Perhaps the most serious feature of these facts is that a large percentage of the deaths have occurred among citizens less than fifty years of age and from causes largely preventable. It would seem that these facts alone would completely justify the action of the community in establishing a public health district and in the preparation for a first class public health administration. Money and effort can be spent to no greater advantage in Quincy than to the end of reducing the excessive death rate and decreasing communicable disease incidence.

The principal causes of death in Quincy are shown in the table below. The number of deaths from the various causes listed are shown by years and by totals for the period studied:

TABLE 32.  
PRINCIPAL CAUSES OF DEATH.

Cause of death.	1916	1917	1918	1919	Total.
Organic heart disease.....	82	68	79	57	286
Pneumonia (all forms).....	60	53	57	30	233
Tuberculosis (all forms).....	66	39	53	38	196
Influenza.....	13	14	119	22	168
Cerebral hemorrhage.....	33	43	34	38	148
Cancer (all forms).....	35	27	44	35	141
Bright's disease.....	29	39	29	19	116
Congenital debility and malformation.....	25	21	31	16	93
Accidents.....	14	13	19	16	64
Diarrhea and enteritis.....	11	15	14	9	49
Bronchitis (all forms).....	14	13	14	5	46
Diabetes.....	14	12	12	5	43
Senility.....	11	14	9	4	38
Cirrhosis of liver.....	6	7	10	7	30
Diphtheria.....	6	7	6	3	22
Suicide.....	8	6	4	4	22
Intestinal obstruction.....	3	5	7	4	19
Disability peculiar to infancy.....	7	1	5	3	16
Syphilis.....	5	5	4	2	16
Measles.....	11	1	3	0	15
Typhoid fever.....	2	6	2	3	13
Appendicitis.....	3	2	3	3	11
Paralysis.....	2	2	4	1	9
Puerperal septicemia.....	2	2	2	1	7
Meningitis.....	2	4	0	1	7
Alcoholism.....	6	1	0	0	7
Peritonitis.....	5	2	0	0	7
Whooping cough.....	0	1	2	3	6
Scarlet fever.....	0	0	2	1	3
All other causes.....	67	87	91	69	314
Total.....	475	423	568	330	1,831

Of the causes of death listed in the table above a large percentage are recognized as absolutely preventable while a still larger percentage are recognized as very largely preventable. The tables below show the number of deaths caused by these classes of diseases:

TABLE 33—PREVENTABLE DEATHS.

	No. of deaths 1916-1919, inclusive.
Tuberculosis (all forms).....	196
Diarrhea and enteritis.....	49
Diphtheria.....	22
Syphilis and locomotor ataxia.....	16
Measles.....	15
Typhoid fever.....	13
Whooping cough.....	6
Scarlet fever.....	3
Total these causes.....	320

The 320 deaths caused by these preventable diseases correspond to a little more than 15 per cent of the total number of deaths among the residents of Quincy from all causes during the period studied.

The number of deaths caused by diseases that are largely preventable are shown below:

TABLE 34—DEATHS FROM CERTAIN CAUSES—LARGELY PREVENTABLE.

	No. of deaths 1916-1919, inclusive.
Pneumonia .....	223
Influenza .....	163
Congenital debility and malformation.....	93
Accidents .....	64
Bronchitis (all forms).....	47
Total these causes.....	595

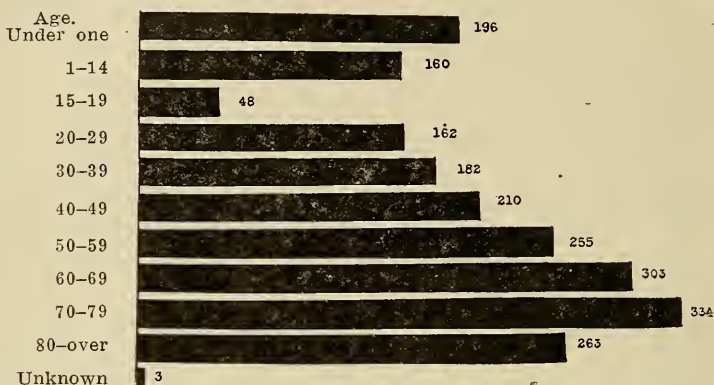


Figure XXVII—Number of deaths among residents of Quincy from 1916 to 1919, inclusive, according to age.

Note the very severe losses among the young citizenship of the community as indicated by the three columns showing the number of deaths between twenty and fifty years of age.

Note also the heavy infant mortality indicated by the first column.

The deaths indicated in the table above were very largely preventable and correspond to a little more than 28 per cent of the total number of deaths from all causes during the period considered.

If the number of deaths due to positively preventable causes be added to those from causes largely preventable there is a total of 915 deaths or a little more than 43 per cent of the total number of deaths that occurred among residents of Quincy from all causes during the four year period 1916-1919 inclusive. In other words almost half the deaths that have occurred during the four year period resulted from preventable causes.

It is also food for thought to know that 748 of the 2,116 residents of Quincy who have died during the four year period had not reached their fortieth year. Instead of living out the allotted "three score years and ten" these 748, or more than 35 per cent of the total number of deaths, failed to reach two score years.

If the number of deaths among people under fifty years be considered it is found that 958 out of the total of 2,116 were in this class. This means that 45 per cent of the total number of residents who died in Quincy during the four years (1916-1919) fell short a score or more of years from the allotted span of human life. These facts are indeed



worthy of the serious attention and the thoughtful consideration of the citizens of the community.

Full significance of the high death rate comes only when it is considered relative to the birth rate and from an economic standpoint. Elsewhere in this report it is shown that the death rate in Quincy almost overshadows the birth rate. If each life under fifty years were valued at \$2,000 the total loss from deaths alone would amount to \$958,000 in the four years considered. These figures correspond to an annual loss of \$239,500 or nearly a quarter of a million dollars. A large per cent of this loss can surely be salvaged since almost all deaths under fifty result from preventable causes.

Another feature of the economic loss incurred from preventable disease finds expression in the loss of time to the patient from these causes. This is scarcely more important than expenses incidental to medical and nursing care during illness and funeral expenses in fatal cases. Again, to the loss of wages or salary to the patient sick from a preventable disease must be added the loss of his service to his employer. Indeed the commercial and industrial lives of our people are so completely interdependent today that the financial expense and loss incurred by the sickness of one wage earner continues to grow and spread its influence until the entire community in which he lives suffers a monetary loss greatly in excess of that of the individual. When considered in this larger sense the annual cost to a community of a few hundred cases of preventable sickness, whether fatal or not, reaches a total sum that is staggering to the senses. To prevent all communicable disease is still a utopian dream but practical experience has proved that an unlimited amount of these diseases can be prevented.

One remarkable example of what practical preventive medicine can do is found in the results obtained among our troops during the World War. Among United States troops during the Spanish-American War 1,600 out of every 10,000 (or 16 out of every 100) contracted typhoid fever. The mortality was frightful. During the World War when several million more men were under arms only 5 out of every 10,000 came down with typhoid in this country and only 16 out of every 10,000 in France. This great reduction in typhoid fever incidence among troops resulted from better sanitary conditions around the camps coupled with the use of typhoid vaccine.

What was true of typhoid fever among our troops in the World War was true of all other communicable diseases. The army as a whole suffered from no epidemics with the single exception of influenza that affected soldier and private citizen alike.

Examples like this surely prove that communities under normal conditions in times of peace can accomplish like results by the use of like methods. Money and effort properly spent in the prevention of com-

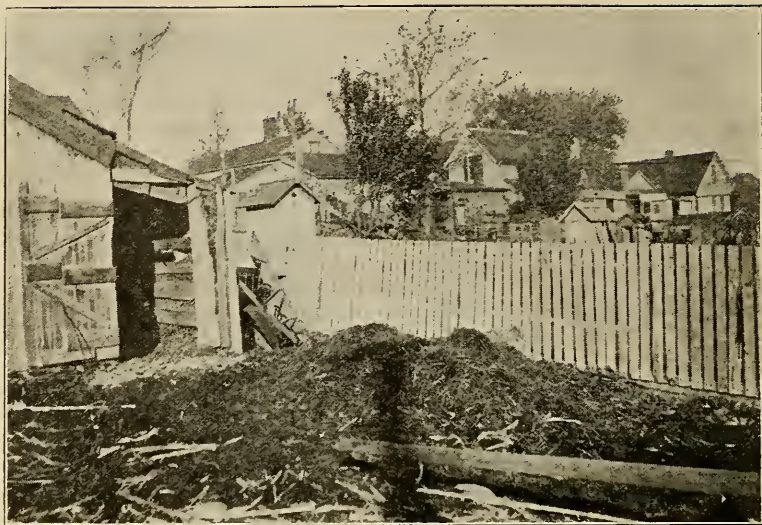


Figure XXVIII—Note fly-breeding manure pile and numerous outside privies.  
Picture taken a little southeast of St. Vincent Home.



Figure XXIX—Note garbage and filth scattered about an open garbage can.  
Picture taken in block opposite city hall.

municable disease will certainly pay big dividends not alone in money but in health and happiness as well.

#### GENERAL SANITATION.

The foundation for good community health is good community sanitation. This arises from the fact that the human body naturally tends to preserve its life and prolong its existence by throwing off all malevolent substances that may accumulate in it. These substances that tend to poison life and cause sickness, when retained in the body, are expelled through various channels as excreta. It is a simple conclusion that these things, harmful to one person, will create an injury when taken into the body of another person. All insanitary conditions that tend to make difficult the disposal of these harmful and poisonous excreta in a manner beyond the possibility of their coming into the mouth of another person will help to cause disease.

The chief item of excreta disposal is that of fecal matter. This problem becomes more complicated by reason of the many agencies that join hands in an effort to carry this fecal matter from one person to the mouth of another. Among these agencies are soiled hands that handle food; privy vaults that pollute drinking water and furnish breeding places for flies and various vermin; rubbish and filth that harbor rats and other rodents; unsatisfactory garbage disposal that furnish feeding and breeding places for flies, other insects and vermin; insanitary stables where flies breed abundantly and where rats live and multiply. In seeking the cause of community ill health it is, therefore, well to look carefully into the sanitary conditions of that community.

#### PRIVIES.

The outstanding feature in the prevailing insanitary conditions of Quincy is the exceptionally large number of outside privy vaults found in all parts of the city. In all there are 4,548 or one privy for every seven people in the city. Uncomplimentary as it may seem the facts show that Quincy now maintains more privy vaults per capita than any other city where exhaustive sanitary studies have been made by the State Department of Public Health.

The reasons for eliminating and prohibiting the maintenance of privy vaults in a city are too well known to require space here. That they are breeding places for various vermin, favorite feeding places for the common house fly and altogether lacking in establishing the convenience for which they were created are facts of common knowledge. That diseases of the digestive system and especially typhoid fever and diarrheal diseases are easily and rapidly spread through the agency of the privy, coupled with surface drainage and the fly are also well known truths. These facts alone without adding the unfavorable moral effects on the young and the more indirect effect on health caused by the inaccessible nature of the privy at night and in stormy weather are enough





Figure XXX—Note open manure piles with evidence of infrequent attention. These are first class breeding places for flies and harbor rodents and other vermin. Building in background is city hall.

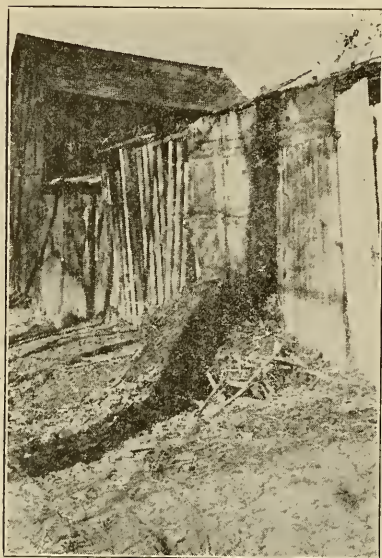


Figure XXXI—Note open manure piles in alley. Picture taken a few blocks northwest of city hall.

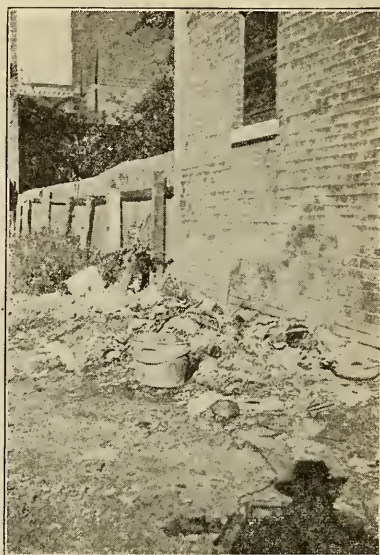


Figure XXXII—Note garbage, filth and ashes. Picture taken in block bounded by Maine, Hampshire, Fifth and Sixth.



to warrant its elimination. The indictment against the privy as an enemy of health and happiness is so unquestionably established and the evidence is so completely incriminating that Quincy would be generously justified in waging a ceaseless war against this public nuisance until the last privy is banished from the city.

#### MILK AND FOOD.

The matter of milk and food inspection is seriously neglected in Quincy. A large part of the milk supply is not pasteurized and none of it is inspected. Food inspection is largely left to the infrequent visits of State officers. Many food products and especially fruits and vegetables are kept in open cases and along the sidewalks where they are subject to flies and insects. These products are also unprotected against careless handling, coughing, sneezing and spitting by the public.

That the production, handling and consumption of milk and food products establishes a channel through which communicable diseases may easily and rapidly pass from one person to another is scarcely to be questioned. New York City found that deaths among infants less than one year of age have been reduced from 241 out of 1,000 in 1891 to 81 in 1919. The commissioner of health credits this reduction very largely to the general pasteurization and inspection of milk that was begun in 1892. The careful supervision over food products is attended with like results. It is, therefore, of the greatest importance that a thoroughly adequate and efficient system of inspection be established in Quincy.

#### RATS.

The rat menace is another important feature in the prevailing sanitary conditions of Quincy. This is encouraged by the lack of rat proofing in buildings generally and especially by reason of the large number of barns and various out-houses of similar character. It is of especial importance that the matter of rat extermination and rat proofing of buildings be given serious thought at this time since a number of cases of bubonic plague have been reported recently at various gulf ports. Plague is usually transmitted by rats and other rodents and the natural course for the disease to follow would be from the gulf ports, by means of the river traffic, up the Mississippi River to the various river cities. It is, therefore, not beyond the realm of possibility for this disease to gain a footing in Quincy, and the results of such a footing under the local climatic conditions are not at all reassuring to think about.

#### STABLE AND MANURE.

Stables and stable manure were found in numbers sufficient to attract considerable attention from a sanitary standpoint. Altogether there are 961 stables in the city and out of this number 400 accommodate horses or cows or both. With very few exceptions manure is allowed to accumulate in the stables or else it is piled in the lot or alley and is

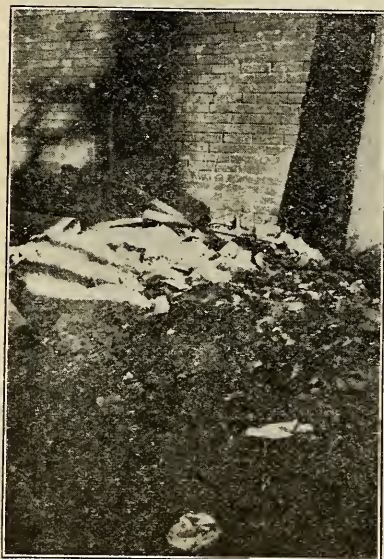


Figure XXXIII—Found between Fifth, Sixth, Maine and Hampshire.

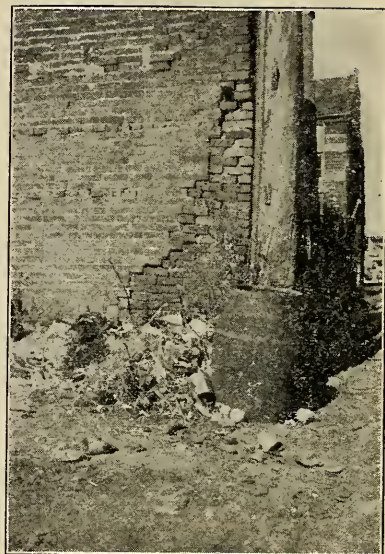


Figure XXXIV—The way garbage is kept in block opposite city hall.

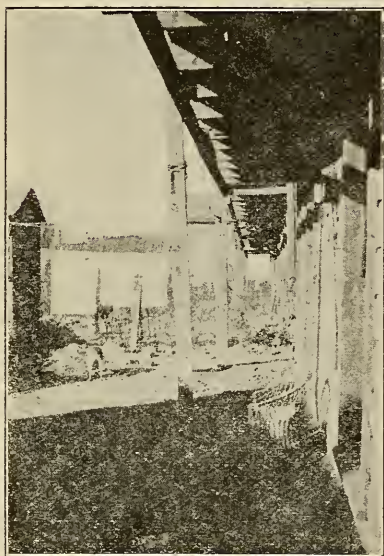


Figure XXXV—Another picture of "Adams Row."

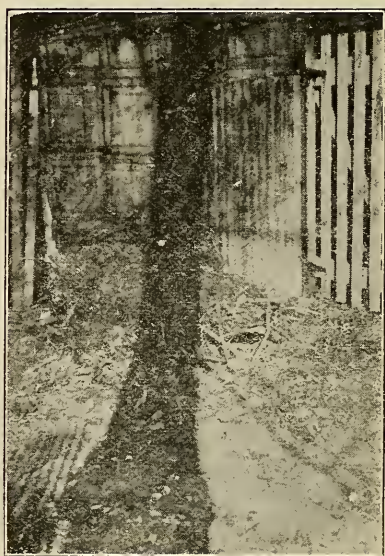


Figure XXXVI—In a first ward alley.

hauled away at infrequent intervals. The most serious objection to this practice is that manure piles are the prolific breeding places of flies. During the sanitary survey flies were found in great abundance in many sections of the city and it was quite noticeable that they were especially numerous in neighborhoods adjacent to filthy dumps and insanitary stables. It was also very noticeable that flies infest the homes of the less financially able who are, above all others, less able to withstand the evil effects inaugurated by the fly pest. The only way to destroy the fly pest is to destroy the fly and that can be accomplished in no other way than to remove all breeding places that are likely to accommodate him.

#### GARBAGE.

The matter of garbage collection and disposal seems to be decidedly unsatisfactory. The local inspectors reported 284 instances where garbage was either thrown into the alley with rubbish, dumped into an abandoned cistern or thrown into the yard in an insanitary manner. Complaints of infrequent collections were quite general throughout the entire survey. Behind one of the leading restaurants two open barrels were kept for garbage receptacles. They were housed in a space used for preparing foods. These quarters were fairly alive with industrious flies that busied themselves with frequent trips from the garbage barrels to food articles, many of which were ready to serve. Similar conditions were true in many other places on a smaller scale. Very few places were found where garbage receptacles were properly covered and where frequent collections were made.

#### HOME CONDITIONS.

During the house-to-house canvass 959 conditions were reported that needed immediate attention from a sanitary standpoint. These conditions were all inclusive in character and related to matters of garbage disposal, manure disposal, insanitary privies, defective plumbing, sewage disposal, etc.

#### WELLS AND CISTERNS.

Fortunately Quincy has very few shallow wells, there being but 48 in all. On the other hand there are 3,659 cisterns but these become a menace to health only when the water therefrom is used for drinking purposes and then only in cases where the cisterns are not properly protected against contamination by surface drainage and other foreign substances. Several cisterns were found that were not properly protected.

#### GENERAL CONDITIONS.

In most of the down town business districts the merchants and apartment residents habitually keep large and unsightly piles of rubbish, often mixed with garbage, in the back lot. These seem to be largely the result of infrequent inspections since every case found by the State



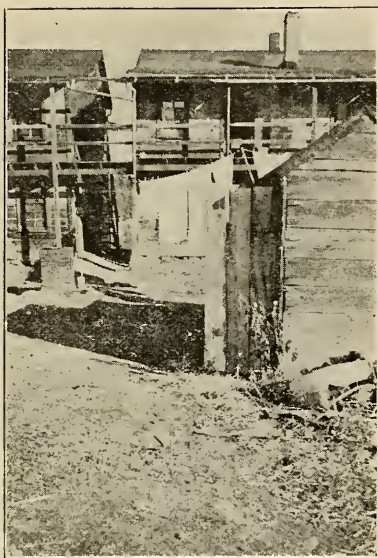


Figure XXXVII—Note proximity of privy, well and dwelling. Picture of "Adams Row."

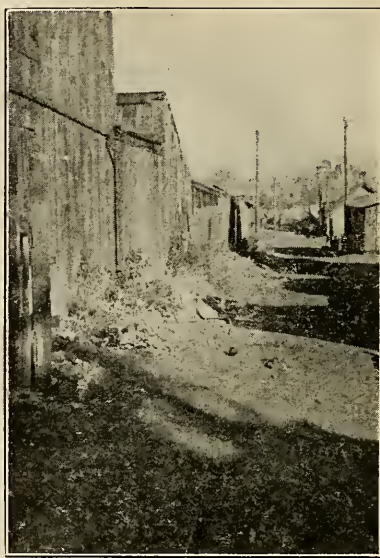


Figure XXXVIII—Note garbage and other filth scattered in alley. Picture taken in second ward.

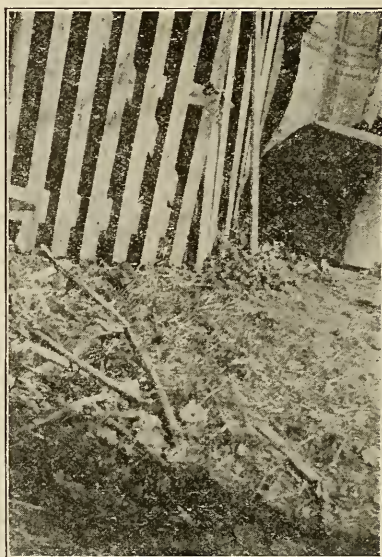


Figure XXXIX—Note kind of stable where flies breed prolifically. Picture taken in first ward.



officials was readily corrected when the attention of the responsible people were called to it.

Vacant lots in the city serve quite often as semi-public or neighborhood dumps. This practice would be all right if properly supervised. There is no objections to filling in with rubbish if it is covered with soil to prevent the breeding of insects and rodents. Garbage disposal onto these dumps ought to be strictly prohibited.

Alleys generally were found in good condition. However, a feature of importance from a sanitary standpoint is that a rather large number of open garbage receptacles were found in the alleys and a considerable number of cases where garbage was dumped outright into the alley. These conditions seem to grow up because of infrequent inspection.

Poultry yards were found in large numbers in the city. They create a sanitary problem when not properly cleaned and when garbage of a nature not suitable for poultry food is thrown into the yard. Reports of these poultry yards show that they need a closer supervision by the sanitary officer.

The local inspectors visited 8,362 premises during the course of the survey. Each of these premises was rated from a sanitary basis as good, fair or bad. Slightly more than half the homes, or 4,690 were rated as good; 2,978, or slightly more than one-third of the homes were rated as fair; 694 premises, or about 8 per cent were classed as bad. Only those premises where the general sanitary conditions were such as to warrant prompt attention and a thorough cleaning were rated as "bad."

#### CONCLUSION.

From the outline of conditions set forth above it is apparent that Quincy is not at present properly protected against the appearance and the spread of communicable disease. Especially is this sort of protection noticeably lacking in connection with the school system. Milk and food inspection is also seriously neglected.

The general death rate in Quincy is excessive. Compared with other similar cities and with the State and the United States it is high. The high death rate among residents under fifty years of age attracts especial interest. Nearly half of all deaths that occur in Quincy are among citizens less than fifty. That the high death rate, and especially those deaths due to preventable causes, are directly and closely related to insanitary conditions and the lack of medical care in the schools and elsewhere is not doubted.

The general sanitary conditions are somewhat below the average for cities the size of Quincy. These conditions center around the large number of outside privy vaults found in all parts of the city. Other insanitary conditions are of a nature easily corrected but the elimination of the privy vaults from Quincy will require a prolonged and determined effort. Nothing short of a ceaseless warfare will rid the city of the privy nuisance.

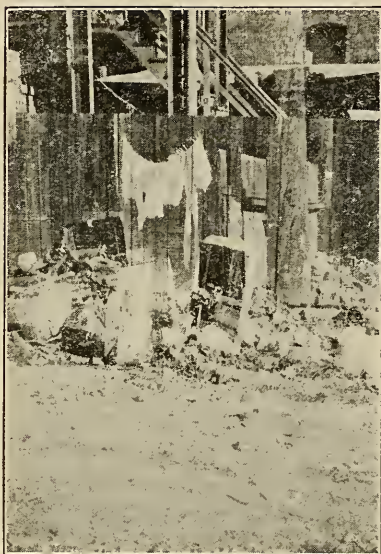


Figure XL—Picture taken in City Hall block.

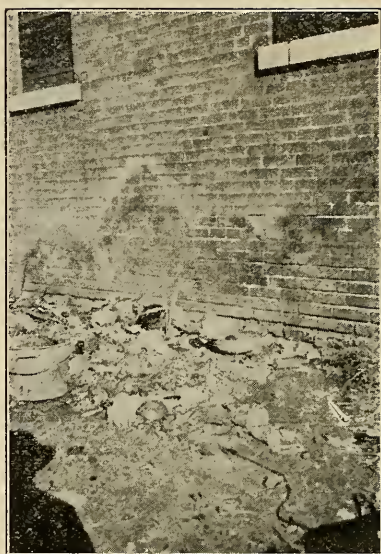


Figure XLI—Picture taken in block bounded by Maine, Hampshire, Fifth and Sixth.

Note general insanitary conditions.

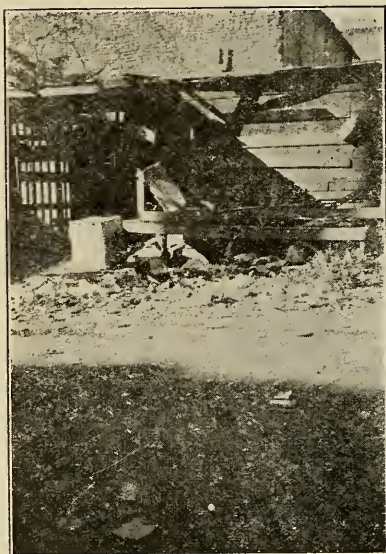


Figure XLII—Picture taken in block opposite City Hall.



Figure XLIII—Picture taken between Maine, Hampshire, Sixth and Seventh.

Conditions like these harbor rodents and disease carrying insects.

Paramount in importance is the conclusion that Quincy has already taken a long stride in the direction of solving her sanitary and health problems. That the citizens have voted upon themselves a special tax for the purpose of creating an efficient and well equipped health department is worthy of the highest commendation. Active cooperation on the part of individuals and organizations in the city is the principal factor that will determine the successful functioning of the new public health administration.

#### RECOMMENDATIONS.

The first and most important recommendation deals with the personnel and organization of the health department. Upon this depends, to a greater degree than upon all other factors combined, the future success of public health administration in Quincy.

The organization should include the following minimum personnel:

- (a) Commissioner of health—Physician.
- (b) Medical assistant—Physician.
- (c) Sanitary inspector.
- (d) Milk and food inspector.
- (e) Bacteriologist and chemist.
- (f) Six nurses.
- (g) Office assistant.

A man capable of efficiently discharging the duties of the office of health commissioner should be a physician trained and experienced in public health administration. He should have complete executive responsibility for all the functions and the policy of the health department.

The medical assistant to the commissioner should be a physician. He is especially essential in connection with the medical inspection and care of school children. One or more part time officials sometimes serve to advantage in this capacity.

The sanitary and the milk and food inspectors should be full time officers. Their work can be coordinated to advantage.

The bacteriologist and chemist is perhaps next in importance to the commissioner. His duties would include the analysis of milk, food and water specimens. He would also do the laboratory work connected with the diagnosis of communicable diseases.

The recommendation for six nurses is based upon the minimum personnel attached to public health organizations that are now doing creditable work in other cities. Two of these nurses should be attached to the commissioner's office while the other four would be engaged in school work. The New York City Health Commissioner recommends one school nurse for every thousand children, but with four nurses to begin the work in Quincy the health conditions among the school population ought to show a marked improvement.

#### SCHOOLS.

(a) Public health service in connection with schools is threefold. It suppresses and prevents epidemics of communicable disease; it cor-



rects physical disabilities such as the removal of tonsils and adenoids; it practically instructs the children in the essentials of how to keep well. It is recommended that four public health nurses and at least one physician be assigned to this important work.

(b) Pronounced beneficent results to indigent and backward pupils from dental, ocular, tonsilectomy and adenoidectomy service would seem to justify the establishment of clinics for these purposes. The recommendation is that the city install and equip these clinics and arrange with local professional men for the required clinical attention.

(c) It would seem that there are a sufficient number of pupils with tuberculosis in a quiescent stage to warrant the operation of open-air rooms. It is recommended that steps be taken to establish at least two open-air rooms. Arrangements could doubtless be made with local philanthropic agencies to furnish the additional clothing necessary in given cases while the school board would furnish the rooms and equipment.

#### INFANT WELFARE.

Infant welfare service is probably the most important single function of any local health department. Work in this field always results in the immediate and remarkable reduction in infant mortality.

It is recommended that three infant welfare stations be established. One of these should be centrally located; one should be held in the fourth ward near the South Park District and the third should be established in the sixth ward.

Quarters for the central station ought to be permanent and in conjunction with public health headquarters. For the other two, church or school rooms could be utilized.

#### ORDINANCES.

(a) It is recommended that the ordinance requiring property owners to install plumbing in their houses and connect with the sewers when accessible be revised and rigidly enforced. At present there is a laxity in the law that allows privies to be maintained on certain premises that ought rightfully to be prohibited.

(b) It is recommended that the ordinance which prohibits dumping on vacant lots be enforced.

(c) Stable manure is not properly handled to prevent fly breeding. It is strongly recommended that an ordinance be passed that will require frequent and proper disposal of manure.

(d) It is recommended that the ordinance requiring birth registration be revised to conform with the State law allowing only ten (10) days after birth instead of thirty in which to report.



## COOPERATION.

(a) It is recommended that the health department encourage the close cooperation of the medical profession. This is especially necessary in the control of communicable disease and in extensive infant welfare service.

(b) It is recommended that the municipal and extra-governmental agencies cooperate closely in all public health matters.

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